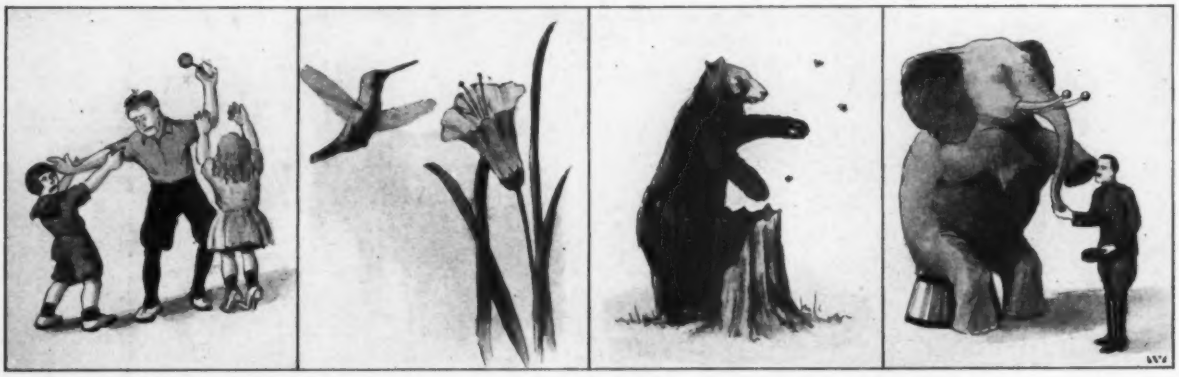
MODERNIZE *Your* HARD CANDY *Department*

In this first section, preceding the editorial page, we have grouped the advertising of equipment and supplies which have an application to the manufacture of hard candy—which is the keynote of this issue.

The irresistible sweet:



Is it conceivable that nature grossly blundered when she implanted in us such a strong desire for sweets, and then supplied that dainty in more than half of all her fruits? There is a wealth of evidence with which we as an industry can nail down the popular prejudices against candy. Read the first of this series in September issue entitled, "The Roll of Candy in Science and Health"—a new picture of the indispensibility of sweets.

In This Issue:

Editorials 40
A Voluntary Sanitary Code for the Confectionery Industry—Eat Candy, It's Good for You.

Hard Candy Making in Red Russia—Prof. B. I. Masurovsky 42

Ask Me! 44

Flavor Blending—Russell B. Stoddard.... 46

Fodder for Sales Conferences Next February—The Adviewer 48

The M. C. Survey of Competitive Refined Sugars (Part II)—Robert Randolph.... 52

The Candy Clinic..... 60
Hard Candies.

Hard Candy Roundtable..... 63

M. C. Institute..... 68

The Buyer's Guide 5

The M. C. Clearing House..... 95

Index to Advertisers..... 98

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39 Cortlandt St., New York City
(Phone: Cortlandt 8262)
F. M. Waters, Manager

E. R. ALLURED, Publisher
ROBERT BANDOLPH, Editor

The Manufacturing Confectioner

EDITORIAL STAFF:

A. Adams Lund — Stroud Jordan
N. W. Kempf — A. P. Bryant
Clifford Clay — R. L. Purdon
Orville H. Knsen
Carey P. McCord, M. D.
De Witt Cottrell — Frank Mulford
A. D. Bullerjahn
Wainwright Davis

English Representative:

L. M. Weybridge, Members Mansions, 38 Victoria St., London S. W. 1

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The new way of insuring standardization, cleanliness, efficiency and economy in your color requirements. Slice as needed—easier to handle.

for

HARD CANDY

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COLOR SPECIALISTS

Editorial

ROBERT RANDOLPH, Editor

A Voluntary Sanitary Code for the Confectionery Industry

IN his message of retirement to the last convention of the National Confectioners' Association, President William F. Heide made this significan statement:

". . . it appears that the Consumers' League of New York, which is but an affiliation of the National Consumers' League of the United States, will spread throughout the entire country, centered and fostered by the headquarters of the League in each state.

"I therefore strongly advocate and I cannot emphasize too emphatically that the manufacturers, whose plants are not just as they should be, proceed without delay to clean up their establishments and keep them clean.

"Today, people demand and insist upon knowing that food products of all kinds—whether candy or otherwise—be manufactured under clean and sanitary conditions, and there can be no argument against consumers demanding and having such rights."

Mr. Heide might have added, and certainly he implied, that unless immediate and strenuous steps are taken to put our own houses in order *voluntarily*, they are very apt to be put in order for us with much less happy results, through the intervention of organized public opinion, and backed, if necessary, by the authorities.

We believe with the majority of the industry that the rank and file of candy factories throughout the United States are conducted along lines as clean, wholesome and sanitary as those of any other food industry of equal magnitude. We realize also, however, that public opinion is not the least bit interested in averages and generalities. Advertising that a product is 99 44/100ths per cent pure may be all right for soap, but it will never do for candy. The manufacturers of food products owe a special obligation to the public, which is not shared by other lines.

We can just picture some manufacturer of high grade confections reading this editorial, and then sitting back and saying to himself something like this:

"If the cheap competition want to keep their plants dirty, is it my fault? Can I help it? I keep my plant so that you can eat off the floor; the public is welcome to go through it any time they please. Can I help it if the other fellow's plant is dirty?"

"Am I my brother's keeper?" asked Cain when questioned concerning his brother Abel. The answer is that individually and collectively, we are responsible for the sanitary conditions within the industry. The offending manufacturers are probably no less conscientious than the man who boasts that one may eat off his floors. But many of them are smaller manufacturers without previous training in the field, who entered the candy business during war time and have grown like Topsy, untutored and unsupervised.

Many of these smaller manufacturers are foreigners whose standards of sanitation and cleanliness are admittedly below the standards required by the American people. It has been the experience of this paper that these candy manufacturers are greedy for knowledge along any line pertaining to their business, and taken on the whole, are more appreciative of what is done for them, than the manufacturers whose long established lines are emblazoned on billboards from coast to coast. *It is your job and our job to educate these manufacturers along modern scientific and sanitary lines.*

Public opinion today demands that every food industry have an expressed or implied sanitary code, governing its conduct along approved medical, social and sanitary lines. When a condition develops where several manufacturers shut down voluntarily rather than face the music, as happened in New York only a few months

ago, the adoption of a sanitary code is not long in prospect.

Now, there are just two ways for such a sanitary code to originate. Either the industry may wait until it is forced upon it, or it may devise a reasonable and acceptable code of its own. The compulsory code, because of its arbitrary character, distributes its penalties alike on the just and the unjust. The very reason for its existence disturbs the market for confectionery and makes bad advertising for everybody. Certainly it has no place in an industry where the vast majority of the manufacturers are trying to do the right thing by the public and where in most instances it is possible literally, as well as figuratively, to "eat off the floors."

So while others have been doing more or less loud talking about sanitation in candy plants and making much ado about nothing, THE MANUFACTURING CONFECTIONER has engaged at its own expense the services and collaboration of Dr. Cary P. McCord and his staff of sanitation experts in the Industrial Health Conservancy Laboratories, to prepare a suitable tentative sanitary code for submittal to the industry.

This comprehensive instrument, a document of some 130 typewritten pages, and covering every phase of federal and state requirements, raw material handling, employe welfare and factory sanitation. is now ready for publication and will be presented in these pages in serial form during the next several months.

The preamble of the Code reads as follows:

"This sanitary code for the confectionery industry has been prepared within the industry itself. It is based on the sanitary experience gained from years of confection manufacture and marketing, by various plants in diverse branches of the industry. This code is a voluntary one. No mandates or penalties are stipulated by those promulgating the code. Many of the suggestions, however, are embodied in municipal, state or federal codes and are, therefore, mandatory.

"The purpose of this self-imposed, suggestive code is to provide a manual of information as to the sanitary and hygienic procedures that should attend all confection manufacture and marketing.

"Since the sale, display or consumption of confections which have been made of materials, or under conditions, inimical to the public's sanitary interests, is likewise inimical to the interests of the confectionery industry, it is proposed to use this sanitary code in the sanitary education of all persons in the industry responsible for the sanitary quality of the confection produced."

The first installment of the Code will appear in the September issue of THE MANUFACTURING CONFECTIONER. As a manufacturer of confectionery, every reader is requested to participate in making this a fair and equitable code. As you read successive portions of the code, write us your views (which will not be published over your name without your permission) in order that they may be given consideration before the final draft of the Code is submitted to the executive body of the National Confectioners' Association for their study and approval.

Eat Candy—It's Good for You

THE Role of Candy in Science and Health is the title of an astonishing series of disclosures relating to the health and food value of candy. The series is the culmination of a lengthy investigation of the subject by the technical staff of THE MANUFACTURING CONFECTIONER. A timely and dramatic opening has been provided by Dr. Herman N. Bundesen, whose stirring address at the recent Chicago convention is still ringing in the ears of the industry. Such phrases as "finest thing for a public speaker is a little piece of candy," "There's nothing better for the teeth than good, old-fashioned molasses candy," "Mother worries about what she can have for dessert," and "You are in some sort of a conspiracy of silence" will reverberate throughout the land to the lasting benefit of the candy industry.

For Dr. Bundesen is president of the American Health Association, and Health Director of the Sanitary District of Chicago. He is much more interested in building sturdy, healthy bodies than in distributing a little flattery among the visiting confectioners at the convention. He says these things because he believes them and accuses the candy industry of the cardinal sin of not believing in their own products.

Just what is the medical, physiological and dietetic background of candy? Is there a just basis for the attacks that are daily being made against candy, or is it, as one

(*Continued on page* 43)

Hard Candy Manufacture in Red Russia

Based on excerpts from "The Making of Candy," published by the Engineers' Industrial Library of the Government Technical Publications—Moscow, 1926

Translated from the Russian

BY PROFESSOR B. I. MASUROVSKY
Consulting Chemist and Technologist

Believing that the American Candy industry is always interested in the varying methods of manufacture employed in other countries, Dr. Masurovsky has prepared a series of translations dealing with current manufacturing practices in Russia.

Candy Making in Red Russia

This is the first of a series of translations by Dr. Masurovsky, on Candy making in Red Russia. Coming articles include

Cream Work--October Issue
Pan Work--November Issue

If you are interested in studying the customs and practices of European candy makers and in seeing how they dove-tail in with your own methods of manufacture, it is recommended that you follow this series, which will later include articles on candy making in Great Britain, France, Germany, Italy, etc.

THE aim of this first article is to give the underlying principles of hard candy manufacture as described in the most authoritative technical publication on candy making in Russia. The presentation of this material is verbatim so far as it is possible to transfer the European candy nomenclature into the language of the average candymaker here in America. As there is no need for introductory remarks regarding hard candy, a well established and highly specialized branch of the candy industry in Russia we will start directly with the *"meat"* of these excerpts.

Definition of the Hard Candy Base

A mixture of sugar, water and corn syrup taken in known proportions and cooked to 280-302 degrees F. constitutes the hard candy base. For the basic types of hard candy the syrup is heated to 280-290 degrees F. while in the case of buttercups or similar types of hard candy the temperature employed reaches 302 degrees F.

There are two general classes of hard candy: one is a solid hard candy while the other class contains a filling making it really two problems rather than one, especially, so far as the technique is concerned.

Preparation of the Sugar Syrup

Always make the syrup shortly before it is ready for use. It is not advisable to prepare the syrup the day before because the syrup will turn yellowish on standing for a long time. Into the kettle place the required amount of sugar, water and corn syrup, stirring the entire mass constantly while heating. With a wet brush or sponge remove any undissolved sugar crystals to prevent graining due to "seeding." For the same reason it is wise practice to remove from time to time a pail or two of syrup through the well and pour it back into the batch to insure the complete solution of any sugar crystals adhering to the various parts of the kettle.

When the temperature of the batch reaches 220-225 degrees F. transfer the syrup into a receiving kettle using a sieve or similar device for straining the syrup. In case the hard candy is manufactured in a vacuum apparatus it is important to regulate the speed of the pump in accordance with the viscosity of the syrup, namely, the thinner the syrup, the slower should be the pumping because it takes more time to bring the thin syrup to the hard candy point than it does a heavy syrup. On the other hand, it is advisable to cook the syrup in a minimum of time in order to secure a very transparent mass. Where hard candy is manufactured in steam jacketed kettles, or where the cooking is done on a free flame in an open kettle, the syrup must be cooked differently. At first the sugar and water is cooked to a temperature of 235-245 degrees F. At this point the corn syrup is added to avoid charring.

The vacuum heating apparatus is equipped with a steam gauge, vacuum gauge and thermometer. The best conditions for cooking the sugar syrup is 6-10 atmospheres of steam pressure. At a pressure of less than 5 atmospheres the mass will acquired a yellow tint and may "grain."

The advantages of a vacuum apparatus are:

1. Greater production per unit of time.
2. Drier, therefore, better product as to keeping qualities.
3. Lighter in color and more transparent.
4. Less chance of charring.
5. Offers a condition whereby more corn syrup can be used thus reducing the cost of raw material.

On the other hand, the finished product manufactured in a vacuum heating apparatus lacks the quality flavor noticed in the same products made in open kettles. The explanation given is that the pumping and suction of the vacuum apparatus removes the natural aroma of the product. Therefore, it is recommended to use a vacuum apparatus for goods to be shipped long distances where the keeping qualities are of importance. For immediate local disposal of hard candy it is advisable to manufacture in open kettles as the finished product is superior in quality.

Formula for Hard Candy Base

Cane sugar, 65 per cent, corn syrup, 35 per cent, and the amount of water used is at the rate of 8.5 quarts to 35 pounds of cane sugar. Too much water prolongs the process of evaporating excess moisture and tends to darken the color of the syrup. However, insufficient water will prevent some of the sugar from dissolving and the entire batch of syrup will sugar, or become grainy.

For the better grades of hard candy the formula above given can be modified by using less corn syrup and more sugar; for instance, sugar, 70 per cent, corn syrup, 30 per cent, and the amount of water on the same basis as in the formula first given. To avoid graining use 3 grams of cream of tartar for every 35 pounds of cane sugar. Dissolve the cream of tartar in a little water just before adding to the syrup.

In using corn syrup the rule should be to incorporate it in quantities necessary for the prevention of graining. In hard candy containing more than 35 per cent corn syrup the rate of becoming moist or "sweating" is greatly increased. For open kettle hard candy work the following formula is recommended: Cane sugar, 72 per cent, corn syrup, 28 per cent, the amount of water at the rate of 8.5 quarts to 35 pounds of cane sugar.

When prepared in open kettles the hard candy base requires a strong flame of heat at the beginning of the process and toward the finish it is lowered to about 268 degrees F.; otherwise, the syrup, and especially the corn syrup portion of it will char. In case the heat applied at the beginning of the process is low, the syrup will become yellowish from slow boiling. For open kettle hard candy work the cane sugar and water are first heated until the temperature of the mass is about 235-245 degrees F., then the corn syrup is incorporated and the process continued in the usual way.

For guidance in preparing sugar syrup for the manufacture of hard candy, the following tables are presented below:

Table showing the amount of sugar present in one gallon of syrup at a temperature of 65¾ degrees F. (15 degrees R.):

Baumé Degrees	Amt. of Sugar (lbs.)	Baumé Degrees	Amt. of Sugar (lbs.)	Baumé Degrees	Amt. of Sugar (lbs.)
10	2.08	20	4.16	30	6.24
11	2.29	21	4.37	31	6.45
12	2.50	22	4.58	32	6.65
13	2.70	23	4.78	33	6.86
14	2.90	24	4.99	34	7.07
15	3.12	25	5.20	35	7.28
16	3.32	26	5.40	36	7.49
17	3.53	27	5.61	37	7.70
18	3.74	28	5.82	38	7.91
19	3.95	29	6.03	39	8.10
..	....	..	....	40	8.31

Table showing the weight per gallon of sugar syrup at a temperature of 65¾ degrees F. (15 degrees R.):

Baumé Degrees	Weight of 1 gal.	Baumé Degrees	Weight of 1 gal.	Baumé Degrees	Amt. of 1 gal.
0	8.31	20	9.56	32	10.51
5	8.56	25	9.97	34	10.72
10	8.90	28	10.18	36	10.93
15	9.23	30	10.39	38	11.09
..	....	..	.....	40	11.31

Eat Candy—It's Good for You!

(*Continued from page* 41)

of our editors affirmed in an article in these columns not so long ago, merely another case of "inferiority complex"? Do you yourself really believe in the healthfulness and food value of candy, or do you secretly caution your own children against "filling up on candy?" And if you don't believe 100 per cent in the power of the product for good, how do you expect you are ever going to get others to believe in it?

Fortunately for those who have the progress of the industry at heart, there is a real scientific reason for the increasing consumption of candy as food. "Candy in Science and Health" presents candy in the new role of bodily *necessity*. It contains a condensed record of the opinions of leading scientists, doctors, dentists, dieticians, skin specialists, and others having definite evidence to present with respect to the health and energy value of candy. It is the sort of information which the sales and advertising forces of the confectionery industry have always needed, always wanted, but never had.

Ask Me!

1. *Why are there two different forms of corn sugar when there is only one form of sucrose?*
2. *Who is Dr. Bundesen and what influence has he had on the candy industry?*
3. *How do sweetness and solubility of sugars determine the point of satiety in individual candy consumption?*
4. *What confectionery raw materials are the following shipping points chiefly noted for?*
   Papantla,
   Fresno,
   Bahia,
   Bordeaux.
5. *What is the meaning of "buffer action" as applied to the use of cream of tartar in hard candy?*
6. *Name an important root vegetable which is employed in candy making without undergoing an extensive process of manufacture?*
7. *What is ribbonzene?*
8. *What important part is the sunflower taking in providing a source of raw material supply for the confectionery industry of the future?*
9. *Name two super-cooled liquids entering into the manufacture and packing of hard candy.*
10. *What common candy ingredients are known to possess valuable antiseptic properties?*

Answers to JULY Questions

1. *What produces gloss on hard candy?*

Ans. The gloss or "shine" on hard candy is believed to be due to the fact that the extremely smooth surfaces of super-cooled liquids (such as glass, hard candy, etc.) reflect light to better advantage than do the comparatively rough surfaces of crystalline solids.

2. *Which hard candy raw materials suffer most by exposure to direct sunlight?*

Ans. The essential oils, which are usually put up in amber-colored bottles, and some of the more fugitive of the aniline colors.

3. *How does the storage of jar hard candy in a fluctuating temperature hasten the admission of moist air through minute leaks in the seals?*

Ans. Changes in temperature cause the air to expand and contract. When the air in the jar contracts, a partial vacuum is formed and an additional supply of air is drawn in through leaks in the seals to restore equilibrium. This process is referred to as a "breathing" action and does not occur when a uniform temperature is maintained. (Under constant temperature, the transfer of air by the normal process of "diffusion" is extremely slow.)

4. *Name three functions of grape products used in hard candy manufacture.*

Ans. As *acidulent*—tartaric acid; as *doctor*—cream of tartar or tartaric acid; as *flavor*—grape concentrate.

5. *What is "color fudge" and how is it used in hard candy?*

Ans. Color fudge refers to a type of corn sugar base employed as a vehicle for hard candy colors. Cut into squares of the proper size, it may be added directly to the batch on the slab, where it quickly dissolves and distributes uniformly through the mass. See also "Color by the inch," appearing in this issue.

6. *Should the amount of acid used in hard candy batches vary according to the amount of flavoring material or the size of the batch?*

Ans. Assuming that the acid in question is not being employed as a "doctor," current practice dictates that the amount of acid shall vary according to the amount of flavor used.

7. *Is hard candy an amorphous form of sugar?*

Ans. Pure sucrose will not exist in an amorphous state. However, inasmuch as hard candy is never pure sucrose, but a mixture of sugars, we may consider that hard candy is an amorphous form of this characteristic mixture.

8. *What is a "fixative" and what is its application in hard candy manufacture?*

Ans. A fixative is the resinous or heavy-bodied portion of a flavor which gives to its staying or lasting properties. The use of a fixative is considered desirable in hard candy flavors, and in fact, in all flavors which are likely to be subjected to heat.

9. *How many certified aniline colors are there? How many of them can you name?*

Ans. Eleven. Amaranth, Ponceau 3R, Erythrosine, Tartrazine, Light Green S.F. Yellowish, Guinea Green, FCF Green, Sodium Indigo Disulphonate, Orange I, Yellow AB, Yellow OB.

10. *How does corn syrup lengthen the shelf-life of hard candy?*

Ans. The dextrin in corn syrup functions as a protective colloid to prevent graining of the sugar. It does this without attracting moisture and therefore produces a drier, and better keeping hard candy, unless used in excessive quantities.

No guess work on temperatures at the Safeway plant. Williard Cook, General Manager, at the left.

Safeway Factory Starts Operation

A NEW candy factory, the output from which will be distributed to approximately 1,400 stores located in the Western half of the United States, has just begun business in the city of Los Angeles, with an initial $1,000,000 order for 200 carloads of assorted candies.

The new enterprise, of which Willard Cook is general manager, will be known as the General Food Products Company and operated as a subsidiary of the Safeway System which has 1,381 stores on the Pacific slope.

The General Food Products Company is housed in a new $500,000 concrete structure and equipped with the most modern labor-saving machinery. The building has the latest type of large factory windows and the interior is finished throughout with "a barrel of sunlight," a surface which is pleasing in color and easy to keep clean.

"An air conditioning system is being built by the Carrier Engineering Company which will enable us to increase our output and improve the quality of our products," Mr. Cook explained. "This equipment makes every day a good day in the candy factory. The automatically controlled arrangement keeps the atmosphere and humidity at a given point all the time. This also benefits our employes because it insures good pure air at all times, air that is washed and changed."

The capacity of the plant is one carload or 36,000 pounds of candy daily. "Our line will be quite general," Mr. Cook said. "We expect to make hard candies, cremes, pan work, caramel work, bars and a general line of chocolate-coated specials. We will employ between 150 and 200 persons and our annual payroll will be in the neighborhood of $200,000."

Between now and December 20th the plant will be rushed to full capacity to fill the large candy orders sent in for the Christmas trade.

Willard Cook was formerly manager of the candy factory owned by Lang & Company, Portland, Ore., now known as the Federal Candy Company.

Robert Whymper Visits U. S. A.

Robert Whymper, the well-known veteran confectionery and chocolate chemist of England, is making a brief visit to the United States. Most of us know Mr. Whymper as the author of various technical papers and text books, among which "Cocoa and Chocolate: Their Chemistry and Manufacture," is one of the most popular. "Modern Confectionery" is one of his more recent works.

Mr. Whymper has a very interesting background in the technology of this industry. He has served as associate and research chemist and industrial fellow with a number of chemical societies and institutes. For fourteen years Mr. Whymper

ROBERT WHYMPER

was chief chemist and novelty expert with Peek Frean & Co., Ltd., London, and later with Huntley & Palmers, Ltd., of Reading. After the war Mr. Whymper traveled through India, Ceylon and North Africa, Italy, Japan and Trinidad, studying conditions and doing consulting work among the confectionery, chocolate and biscuit industries of these various countries. Since 1927 he has worked with Lazzaroni, the oldest biscuit manufacturer in Italy. He spent two years with Morinaga in Japan, the largest manufacturer of confectionery in the Far East.

Mr. Whymper has just returned from Costa Rica, where he has been studying the problems of production and fermentation of cocoa.

Carrier in New Plant

The Carrier Engineering Corporation are now situated in their new four-story factory and office building at 850 Frelinghuysen Avenue, Newark, New Jersey. The building offers a floor area of approximately 112,000 square feet. This expansion is evidence of the rapid advance which is being made in the field of air conditioning as applied for the control of atmospheric conditions in numerous industrial operations, and in public buildings such as theaters, hotels, hospitals and offices throughout the country.

—We speak of flavor compositions, of harmonies and discords. We "affect" the terms volume, note, tone, diffusion, duration and intensity. Is there something more than a happy analogy between good flavors and fine music?

Our Editorial Office Receives a Reminder

from

KING WILLIAM'S TOWN
South Africa

THE REMINDER

REPEATED requests have come to us, not only from this country but from abroad, to follow up in a practical way the editorial on flavor-blending which appeared in the Feb., 1927, issue of the Manufacturing Confectioner. Typical of these requests is the following letter which came from King William's Town, South Africa, to remind us of our promise.

T. WILCOX & CO.,
Steam Confectionery Works.
King William's Town,

The Manufacturing Confectioner,
Chicago, U. S. A.

Dear Sirs:

We may say that the various articles contained in your journal have been very stimulating and instructing, and in passing we should like to remind you that there was one particular article at the beginning of 1927, which referred to the combination of various Fruit Flavours, and the writer of this article said that he would amplify his remarks at some future date, in your journal.

Up to the time of writing we have seen nothing following on the particular article with reference to Fruit Flavours for Confectionery purposes.

We should like to point out to you that the substance of the argument on this particular subject, referred to in the foregoing, was, to our way of thinking, quite true and reasonable and, strange to say, we have carried out in our own Laboratories, many of the suggested ideas outlined in the short article on the Fruit Flavours.

It only remains for the writer of the former article to indicate the trend of his ideas, in order to make the matter complete, and we shall be very pleased to see some further suggestions in your Journal from the same writer.

Commending the above to you.
We remain,
Yours truly,
(Signed) T. WILCOX & CO.,
A. J. H.

Delay in preparation of the series has been due rather to the paucity of technical information on the subject than to any desire on our part to slight the wishes of our readers. It gives us great pleasure to announce at this time that Mr. Russell B. Stoddard, eminent flavor specialist, has come to the rescue with a series on practical flavor-blending — which puts candy flavors in an entirely new light. This series is our answer to the popular demand for more concise knowledge on the subject of flavor blending.

FLAVOR-BLENDING— A NEGLECTED ART

The editorial which prompted the above reminder. Reprinted from the Feb., 1927, issue of THE MANUFACTURING CONFECTIONER.

TO the perfumer, who talks in terms of volume, duration and bouquet, blending has become a fine art. But to the confectioner whose flavors are perfumes, blending is something which the extract manufacturer does when he adulterates his products. The confectioner believes that the good flavors are the simple flavors, the manufactured oils or the mechanically concentrated fruit juices which often lack the smoothness, permanence or character of the fresh fruit or other product from which their names are derived.

Needless to say, they have none of the piquant, intriguing qualities which elevate individual products from the dull, uninteresting mass of ingredients. The same old orange, from whatever source—the same prosaic strawberry with the tame cooked flavor—no delicate blending to arouse the jaded appetite—no distinctive note to tease the palate of the epicure—candy in its duller moments satisfies only the elemental craving for something sweet.

Modern civilization has brought about a great process of refinement in our senses of taste and smell. Up-to-date methods of plumbing and sanitation have removed the filth that was responsible for the reeking odors which permeated the atmosphere during mediaeval times; refrigeration and sterilization have eliminated the foul odors and flavors from the food. We no longer require the heavy spices and powerful flavors which served to mask the signs of inevitable disintegration and decay. We have educated our senses to appreciate the more delicate and fleeting fragrances.

It is often difficult to obtain these lighter bouquets by using simple, unblended oils and flavors. Unfortunately, the fetish of purity has largely obscured the value of blending. Fidelity of character, which is often lacking from the "pure" oils and essences—deliciousness and distinctiveness, are qualities which are far more important to the confectioner in building up a reputation for an "individual" product.

Provided the ingredients are wholesome, the customer is only interested in pleasing his palate and does not give a "hoot" whether you have used straight or blended flavors to achieve your end. Many firms who feature the fact that they use only true fruits and the so-called pure (unblended) flavors have products that are utterly insipid and uninteresting. If the term "true fruit" is supposed to mean that it reproduces the actual flavor of the fruit for which it is named, we question whether any unblended true fruit strawberry, for instance, can approximate the fruity luscious character of the fresh, uncooked berry.

True peach, true grape, and a host of other flavors are sorry imitations of the true fruits from which they are derived. It is a known fact that by combining these flavors with totally different flavors, it is often possible to get closer to the flavor of the actual fresh fruit.

***(EDITOR'S NOTE:** Mr. Russell B. Stoddard, the first article of whose series on flavor-blending appears on the opposite page, has an extremely interesting story to tell in connection with the newly discovered art of flavor-blending.)*

THE MUSIC OF FLAVOR BOUQUET!

As with perfumes, so with flavors:

"The most important element in the perfumer's art is the blending of the odorous principles to form a mixture which gratifies the sense of smell . . . . Septimus Piesse endeavored to show that a certain scale or gamut existed amongst odours as amongst sounds . . . . He illustrated the idea by classifying some fifty odours in this manner, making each correspond with a certain note, one-half in each clef, and extending above and below the lines . . . . He asserted that properly to bouquet, the odours to be taken should correspond in the gamut like the notes of a musical chord—one false note among the odours as among the music, destroying the harmony . . . . "

—Encyclopaedia Britannica.

Flavor-Blending:

a "lost" art?—or a new and unknown one?

By Russell B. Stoddard
Ungerer & Company, Inc.

DESPITE the enormous strides made by the candy industry within a decade along mechanical and other lines, comparatively little attention has been given to the study of candy flavors even from a semi-scientific point of view. For the most part the candymaker has confined himself to a limited and well-defined list of flavors, comprising such well-known natural ones as peppermint, clove, lemon, orange, cassia, anise and wintergreen, and others based on more or less successful duplications for the fruit flavors.

Although great things have already been accomplished in this latter field, much remains to be done before the artificial fruit flavors attain the goal at which they aim. Work on these has been going on continuously for a number of years but flavor-blending in the strict sense of the word is not a "lost" art but practically a new and certainly an almost unknown one.

The Meaning of Flavor-Blending

A definition of the meaning attached to the term "flavor-blending" will serve to clarify matters. By flavor-blending is meant the intentional creation of new and desirable flavors, as distinct from the attempted duplication of a particular fruit flavor such as that of the strawberry, the raspberry or the pineapple. It presages the discovery of delicious and hitherto unknown flavors which will differ from each other and from those popular today as widely and effectively as the modern perfumes differ from the flower perfumes of twenty and thirty years ago. For while it may be asserted with reason that some of the artificial flavors in use today differ sufficiently from anything ever produced by nature, the variation from type is neither intentional or desirable in these instances.

The perfume industry offers many excellent analogies all along the line. Originally the only perfumes were those of natural origin. With the advent of synthetics a change occurred. At first, all effort centered on attempts to duplicate the well-known floral odors as *closely*, but it must also be confessed, as *cheaply* as possible. But before long the perfumer was destined to cut loose from convention by essaying the creation of new and distinctive odors. Forgetting the supposed barriers of style and custom, he commenced using his new ingredients (and his old ones as well) with greater freedom. The results were surprisingly satisfactory both to himself and to his public. Today, if a perfume is agreeable and novel, who asks if it is a rose or a jasmin? And who cares?

Courage Needed to Divorce Tradition

The candy industry has by no means attained this sense of freedom nor yet dared to explore the possibilities of really novel appeals to the palate. The feeling still persists that all efforts must be confined to well known and easily recognizable flavors which at least have the merits of having been long tried and approved by the public. Tentative advances in the direction of new or novel flavors have been made from time to time, and frequently with success. In most instances it has merely meant turning from a fruit to a flower. Nevertheless the floral flavors such as violet, rose, etc., are a step in the right direction in that they serve to show what can be accomplished with a little courage and initiative.

As has proved to be the case with perfume-blending, we are compelled to face the fact that the problem is only remotely susceptible to scientific treatment until the wide gaps in our present knowledge of the relations between taste, odor and chemical composition are filled. Such a prospect seems too remote to be given practical consideration. Consequently, the problem is susceptible only of empirical solution, which is to say, by the time-worn but scarcely out-dated method of trial and error. Genius and an instinctive flair for the right sort of combinations may play their part but mostly the experimentor will be forced to make countless trials acquiring them by much experience in an almost uncharted field.

It is impossible to forecast with any certainty what will be the effect of most of the compositions. The expert perfumer has accumulated much knowledge of this subject as relates to his own field and can now predict with reasonable assurance what will happen when he puts two or more odors together. However, he has acquired this fund of information only by experience. The flavorist must do likewise. He will gradually discover that certain ingredients usually go well together and that certain others will inevitably clash. Yet at no time will he ever be absolutely sure of the results of a complex blending except by actual test.

Making Use of the Tools at Hand

The possibilities in the field are as fascinating as they are unexplored. Not only do we have a very considerable number of essential oils, synthetics, employed as starting points in trying out new and novel combinations but there are possibilities inherent in a vast number of other materials which are almost never used by the candymaker, and whose names are as strange to him as they would be to a carpenter. Space limitation forbids even a partial listing of them, but it will illustrate the point to mention that even such familiar essential oils as mandarin, nutmeg, cinnamon bark (not cassia), angelica, geranium and orris which are used effectively by some candymakers are unfamiliar

(*Continued on page* 59)

If flavors were music, would your flavors make "opera" or "jazz?"

Fodder for Sales Conferences Next February

THE summer of 1928 will have no special awards or resolutions of thanks voted it by candy manufacturers, their sales executives or The Adviewer. To all outward appearances it is just another of those things. Half over as this is being written, no great amount of summer advertising of candy of outstanding interest has found itself into print so far to send a thrill of hope rippling through the industry.

An industry as eager to be thrilled as, say, the Democratic party.

True, time yet remains for some ambitious and persuasive promotion man to start something in the way of a test. In fact, a month of advertising now in some carefully selected territory would be worth an inestimable amount of experience to more than one manufacturer. When he works himself into a planning frame of mind late next winter, the man who had nerve enough to run a test campaign in August, 1928, will have a big edge on competition in mapping out his summer campaign for the summer of 1929.

For one of the safest predictions imaginable is that sales executives in more than one candy factory will get together of an afternoon next February, light cigars, swap small talk about the coming inauguration of ———,* and then settle down to business. More specifically, the business of deciding what can be done to and about sales during the coming hot weather months.

At that strategic time one of the brighter and more resourceful executives may think to ask for the August issue of THE MANUFACTURING CONFECTIONER. And if that happens, the serious little group may freshen up its memory regarding what was done advertisingly during the preceding year's doldrum months.

What did happen then? Johnston's of Milwaukee kept up their bright, distinctive advertising during the summer in magazines. Alluring advertising that competed (and successfully) for interest with the new automobiles, the mechanical refrigerators, the food products, soaps and such. It is The Adviewer's guess that this advertising did something worth talking about to keep the slump out of Johnston's sales. Whitman's, too, held a fast pace with a delightful, summery series of advertisements. Oh Henry! and Baby Ruth refused to let up. The latter product got some good publicity in the aviation classic sponsored by Edsel Ford which was won by a plane entered by Otto Y. Schnering, president of the Curtiss Candy Company. Bunte, one of the pioneers in pushing candy sales during the summer, kept everlastingly at it again this year. And the Clark bar was well advertised as a summer snack.

The big majority of the others apparently recalled and put their trust in that bit of verse which runs:

"The oyster never leaves his shell
And does, therein, exceeding well."

Anyone interested in learning whether candy sales will respond to advertising when the mercury is popularly supposed to be ready to burst can look to those companies mentioned above for the answer. They know and can tell, if they will. One thing, however, is reasonably certain, namely, that companies as well managed as Johnston's, Whitman's and Bunte would not throw hard-earned dollars into advertising summer after summer if those expenditures did not show results.

At the February conference on ways and means to pump a little life and profit into the summer of 1929, it might be well to recall a highlight or two from the experience of an old-timer in the furniture business who makes a specialty of hanging up a new record each hot weather season for his house.

"The secret of success of a summer drive," he says, "is in keeping everybody on the job. There's no objection to a business man going on a prolonged vacation, if he needs it or can finance it. That's his business. But it is my conviction that his attitude toward his co-workers, as well as the particular alibi he uses in covering up his own extra time out, always counts more than any other one factor.

"Keeping the boss on the job during a summer sales campaign is really more important than using a lot of 'whoop-it-up, boys' stuff. It's one thing to get the salesmen to sign the pledge to resist all summer temptations, but it's something approaching a miracle to keep them on the hot, dusty trail. The boss can plead, argue, shame or force them into the sweepstakes contest, but if he runs away soon after the race starts, they'll find it out and stop—or slow down—under the first clump of trees.

"Salesmen are human—probably more so than the boss himself. They can think right along with him when it comes to finding reasons (excuses) for joining the ranks of the employed, but loafing during the hot months. Why shouldn't they? When the boss plays the game with the boys, things are different. At least there is a better feeling throughout. Salesmen enjoy their contests and they will play to win, but they are wise to what it's all

*Insert Al Smith or Hoover, as desired.

about. They aren't going to break their necks to win a stickpin or a fountain pen in exchange for a full-time summer working schedule—not unless those behind the lines are on the job at every bugle call.

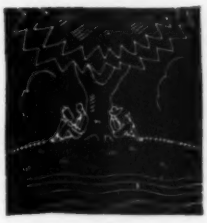
"I know our salesmen face some quite discouraging conditions during the summer months. It calls for a lot of extra effort on their part to keep going. We cannot expect them to accomplish the impossible. So long as they are loyal and trying to hold up their end of the summer campaign no more can be expected of them."

Not much about advertising in his formula for licking the summer slump. But advertising plays a big part with him just the same. His company's direct mail campaign is accelerated every summer. Quotas are sold harder than ever to the men, and at the same time customers are allowed to forget the company's line in between the salesman's calls. But most important, he says, is the fact that summer selling is a "we" undertaking.

For the manufacturer who is skeptical as to results, the idea of conducting a test campaign from August 15 to September 15 is put forward seriously. It would be a highly interesting event. Some city of fifty or sixty thousand could be selected and for a few hundred dollars a mighty valuable little text book concerning summer candy advertising could be written. Dealer and consumer reactions could be followed closely. Much might be learned that will be valuable six months from now when the question of getting a profit out of next year's hot months comes up. The Adviewer believes that when the candy industry makes a start in the direction of supporting 12 months' overhead by 12 months' instead of nine months' sales, it will have hurdled one of its biggest obstacles.

Candies? Of Course

IT is doubtful if there is any shrewder retail merchandiser in this country than Marshall Field & Company. As a New England boy, Mr. Field brought with him to Chicago a sixth sense—the sense of knowing what people wanted and how to sell it to them at a profit. The accompanying illustration shows a post-card used by Field's this summer as an enclosure with merchandise sold. On the side of the card not shown is a space where



FRESH CANDIES FOR THE SUMMER HOME

DURING the summer months we make a specialty of Candies that are particularly suitable for shipment to summer homes. In 1, 2, 3, or 5-lb. boxes.

We also carry our regular, full lines of Chocolates, Caramels, Bonbons and other varieties.

Send us your order for shipments each week, or at such intervals as you may desire.

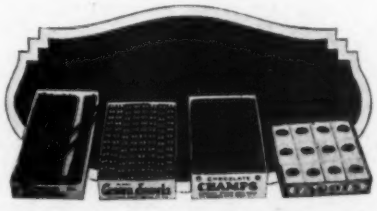
Our facilities for packing and shipping are unsurpassed; and goods intended for seashore or country homes, week-end outings and automobile trips are shipped at the earliest possible moment after receipt of order.

MARSHALL FIELD & COMPANY
CHICAGO

an order may be entered, with the shipping address and the name of the person to be charged. The card itself is nicely, but not fussily designed. Stronger than the usual hastily designed post-card and simple enough not to run into money. The copy takes it for granted that at the summer or vacation home a person will simply need and want a supply of fresh candy. No argument about it. No urging. The assumption is that you will want to buy. And the post-card offers a quick, convenient, simple way to do it.

More of This Needed

THE accompanying advertisement of The Gardiner-Lucas Licorice Company is a good example of the kind of advertising more candy manufacturers need to undertake. Positive, interesting, pertinent copy. Clean, attractive lay-out and typography, although the length of the type line is perhaps a bit long for the type size used. Many advertisers are too easily satisfied and, as a result, their products, when they get on the newspaper or magazine page, show little snap. Just read this copy—not a negative thought in it. Every sentence a positive, persuasive reason for buying the four items illustrated. One suggestion might have made this advertisement a bit more effective. If the shield-shaped background for the candies were screened a little lighter, the candies themselves would stand out in sharper contrast and the whole piece of copy would have attained stronger display. That, however, is a detail. All in all, this advertisement is highly satisfactory. More like it are sadly needed by the industry.



LICORICE AND SUGAR SPECIALTIES
—good for summer business

Here again—Page Sticks, Chocolate Champs, Green Jewels, and Fagots—old friends you know so well! Proved sellers, proved profit makers—their demand this summer will be heavier than ever...They are indeed summer's own candy. Cooling and delicious, they sell in the hottest weather—and in a market that reaches from New York to the Golden Gate...You know the consistent high quality of these products—you recall the attractive profits you made on them last summer—you can well depend on such old friends to perform again. Order your stock now.

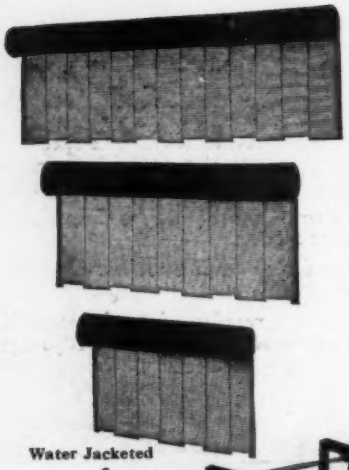
NINE GOOD NUMBERS
Page Sticks, 120c Fagots, 24c Green Jewels, 120c Champs, 120c
Licorice Lozenges, 5 lb. & 24c Sweet Capered Cigarettes, 120c
Research Sticks, 240c Licorice Cigarettes, 120c Nicety Buttons, 120c

THE GARDINER-LUCAS LICORICE CO., INC.
101 Gold Street, Brooklyn, N.Y.

Direct, Safe, Sensible

STUDY it. Pick it to pieces. Analyze it. Turn it upside down or put it under the microscope or on the scales, this advertisement for Woodward's sugar stick candy proves up as safe and sensible. There's nothing thrilling or unusually interrupting about it. It's too simple for that. But the story is there, easy to grasp and difficult to forget once one has read it. Likely to be believed, too, because there's nothing extravagant in the statements made. This is a good advertisement—good by reason of its apparent lack of artfulness, its absence of shrieking for attention and its freedom of everything that implies high-pressure. If more candy manufacturers followed the sales and advertising tactics that this piece of copy suggests the in-

(*Continued on page 67*)



GREER Wire Belt

Greer Wire Belt is made in our own plant out of the very best wire. Standard belts in 16-in., 24-in., and 32-in. widths, fit any Coater or Enrober.

Any length of belt furnished as requested.

Wire belts are expensive. Why not buy the best?

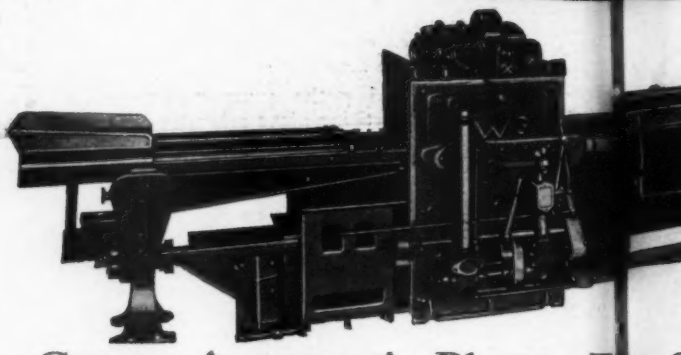
PATENTED

HENDERSON Crystal Rack

The Henderson Crystal Rack is the solution to the Crystallizing problem.

Produces 600 pounds of high grade goods per batch. Two batches per day.

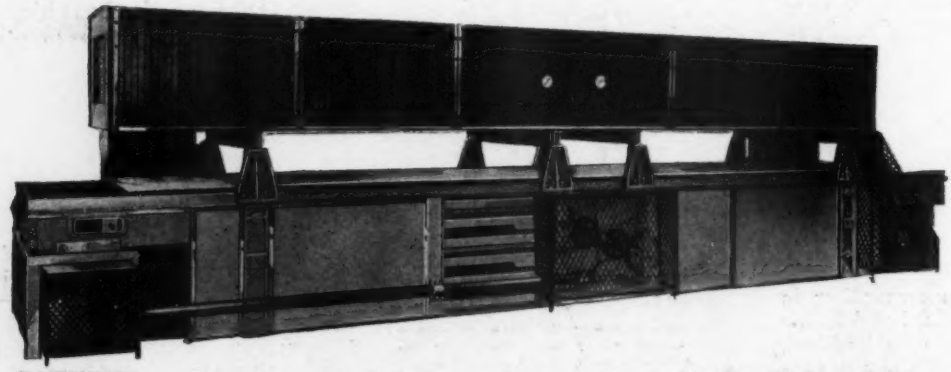
Most compact, sanitary, economical, and labor saving method of making crystallized work.



GREER Automatic Plaque T[ur] C

Where floor space is at a premium the G[reer] matic machine is the ideal means of overcoming th[is] y. Go machine and are automatically transferred to [the] cool ing and Cooling machine operate continuously [with] s no in ing machine is only 24 feet long yet is equiv[alent] tunne

PATENTED



PATENTED

GREER Chocolate Cooling Machine

For Bars and Ten Pound Cakes

The Greer Chocolate Cooling Machine is recognized as the best and most modern means of cooling any solid moulded chocolate. The standard machine has a capacity of 2500 pounds per hour and yet occupies a space only 5½ feet x 28 feet.

Moulds of any size can be used in this machine. Warming tunnels are supplied to warm and return empty moulds to moulding room.

The GR[EER] Co[oling]

The Greer Tunne[l] awkward air [c]be in uniform result[s] l is t room. Patent[ed] n of be connected [l]ike of

GREER Qui[ck] ing

The surprising f[eature] this C is its cooling capa[city] is du efficient method of circu the water. It use[s] e wat are obtainable only [in] er Sla

J. W. GR[EER]

Manufacturers of C[andy] rs' M

119-137 Winds[or]

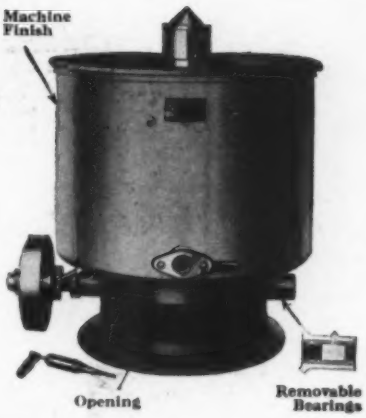
RER
ctie Machinery
at Dividends

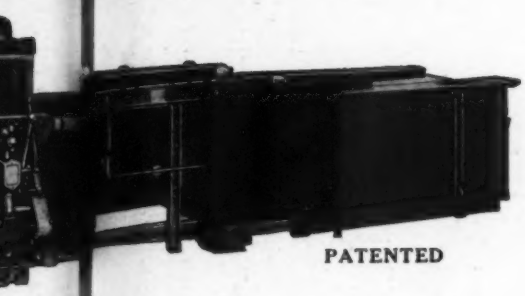
GREER Perfected Chocolate Melting Kettle

The Greer Perfected Melting Kettles are the latest, most sanitary and efficient type of Melter. The use of Greer Kettles insures a uniform coating.

Outside surface is polished. No paint to crack off. Removable bearings throughout.

Made in 150, 300, 500, 1000 and 2000 pound sizes.

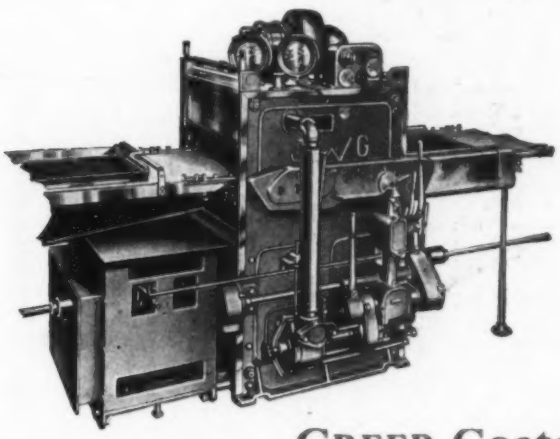




PATENTED

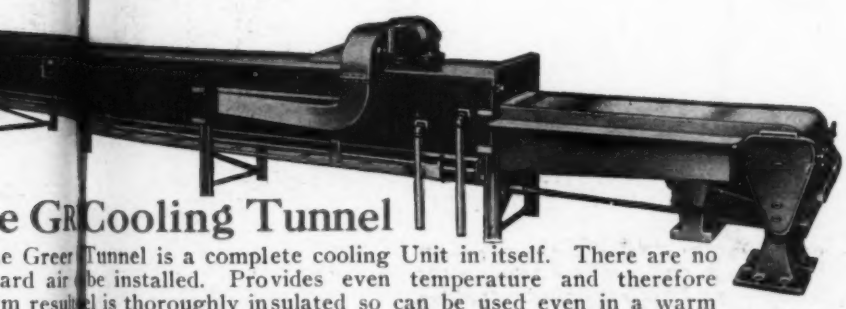
ue Ter Cooling Machine

the Gr atic Plaque Transfer Cooling oming th . Goods are fed thru Coating erred to n cooling machine. The Coat- tinuous s no intermittent motion. Cool- is equi tunnel 90 ft. long.



GREER Coater

The Greer Coater produces a remarkable amount of coated goods, and yet maintains the highest of quality. Simplicity has been achieved at last in a coating machine. In operation it is practically noiseless—a noiseless type of blower and drive being used. Variable Speed Transmission—NOT STEP GEARS—provides any desired speed.



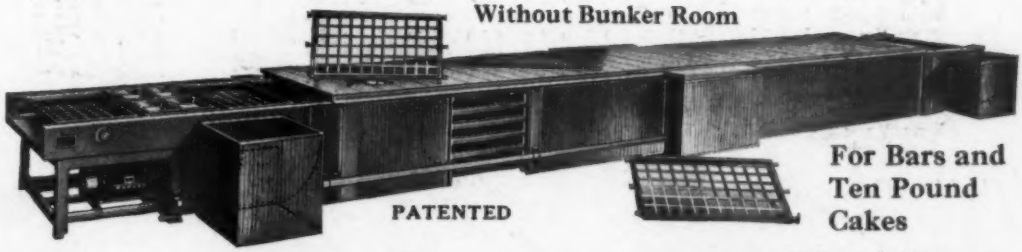
e GR Cooling Tunnel

e Greer Tunnel is a complete cooling Unit in itself. There are no ard air be installed. Provides even temperature and therefore m result el is thoroughly insulated so can be used even in a warm Patent n of conveying belt insures much longer life for belts. Can nected ke of Coater or Enrober.

ER Quilting Candy Slab

prising t this Candy Cooling Slab ling capa is due to the unusually ethod o circulating and drainng . It use e water. These features nable only er Slab.

Without Bunker Room



PATENTED

For Bars and Ten Pound Cakes

W. ER COMPANY

rers of Cers' Machinery That Pays Dividends

Winds CAMBRIDGE, MASS.

GREER Chocolate Cooling Machine

This machine is the same as that illustrated on opposite page except for Bunker Room. With this type cold air is supplied from coils located in some other part of the plant.

Four Months' Analytical Work Brings M. C. Sugar Survey to Brilliant Conclusion

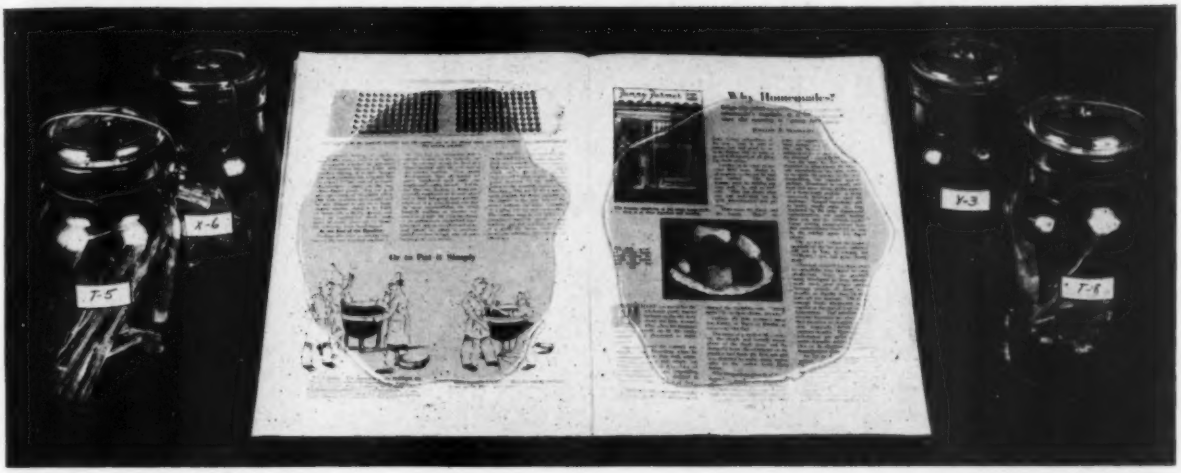
Full Detailed Report of Analyses of Principal Cane and Beet Sugars Sold in Leading Confectionery Manufacturing Centers—

COARSE-GRAINED SUGARS:

Lab. No.	Where obtained	Date Rec'd	CHARACTERISTICS OF—The Sugar—Direct polarization	The Sugar—Color	The Sugar—pH	Candy Test—Direct polarization	Candy Test—Color	Candy Test—pH	OTHER CHARACTERISTICS OF THE SUGAR—Invert sugar	Moisture	Ash	Undetermined organic matter	SO_2 parts per million	Clarity	Dye value
T-6	New York	Jan. 20	99.90	1.0	6.5	92.3	7	4.5	0.04	0.01	0.007	0.043	..	13	3.0
T-2	New York	Jan. 20	99.90	0.5	6.3	92.2	8	4.2	0.03	0.01	0.006	0.054	..	13	2.5
S-11	Chicago	Dec. 6	99.85	0.5	6.5	93.6	7	4.8	0.04	0.00	0.003	0.107	..	25	3.5
W-4	New York	Jan. 20	99.90	0.5	6.5	93.3	8	4.6	0.04	0.04	0.005	0.015	..	10	2.0
Z-2	New York	Jan. 20	99.90	0.5	6.5	93.8	5	4.8	0.02	0.03	0.001	0.049	..	10	2.5
X-5	New York	Jan. 20	99.80	0.5	6.5	94.1	12	4.8	0.03	0.07	0.003	0.097	..	10	3.5
S-12	Chicago	Nov. 26	99.90	0.0	7.2	93.0	3	4.6	0.04	0.01	0.002	0.048	..	3	3.5
Z-5[1]	New York	Jan. 20	99.85	0.5	6.4	93.9	5	4.4	0.03	0.02	0.002	0.098	..	3	4.0
X-2[1]	New York	Jan. 20	99.90	0.5	6.5	94.2	14	4.6	0.04	0.04	0.002	0.018	..	6	2.0
T-5	New York	Jan. 20	99.80	0.5	6.5	92.2	7	4.5	0.04	0.03	0.004	0.126	..	2	1.5
X-6	New York	Jan. 20	99.80	0.5	6.3	94.0	9	4.5	0.03	0.05	0.002	0.118	..	6	5.0
W-3	New York	Jan. 20	99.90	0.5	6.5	92.6	3	4.8	0.04	0.01	0.004	0.046	..	3	3.0
W-5[1]	New York	Jan. 20	99.80	0.5	6.7	94.0	7	4.6	0.03	0.04	0.002	0.128	..	10	4.5
Z-4	New York	Jan. 20	99.85	0.5	6.3	94.1	7	4.8	0.04	0.04	0.003	0.067	..	3	2.0
S-10	Chicago	Dec. 2	99.90	0.5	6.6	94.0	7	5.0	0.04	0.03	0.002	0.028	..	6	2.0
W-6	New York	Jan. 20	99.90	0.5	6.5	93.7	9	4.6	0.03	0.06	0.001	0.009	..	13	3.5
T-4	New York	Jan. 20	99.80	1.0	6.3	94.2	8	4.3	0.04	0.02	0.004	0.136	..	3	2.0
Y-1	New York	Jan. 20	99.90	0.5	6.3	93.6	10	4.7	0.05	0.04	0.003	0.007	..	0	4.5
AVERAGE			**99.86**	**0.5**	**6.5**	**93.5**	**8**	**4.6**	**0.04**	**0.03**	**0.003**	**0.066**	..	**8**	**3.0**
FINE-GRAINED SUGARS:															
Y-2	New York	Jan. 20	99.90	1.0	6.3	94.1	14	4.6	0.05	0.04	0.005	0.005	..	3	2.5
T-1	New York	Jan. 20	99.90	1.5	6.5	93.2	18	4.2	0.04	0.01	0.009	0.041	..	10	4.5
S-4	Chicago	Dec. 1	99.80	..[2]	6.8	94.2	11	4.9	0.05	0.10	0.007	0.043	..	10	2.0
X-4	New York	Jan. 20	99.85	4.0	6.7	95.1	30	4.8	0.05	0.05	0.010	0.040	..	11	7.5
W-2	New York	Jan. 20	99.90	1.5	6.3	94.0	9	4.5	0.04	0.02	0.002	0.038	..	10	1.0
S-8	Chicago	Dec. 2	99.85	1.5	6.6	94.8	11	5.2	0.04	0.04	0.008	0.062	..	3	5.0
S-1	Chicago	Nov. 26	99.80	2.0	6.5	94.8	9	4.9	0.04	0.06	0.015	0.085	..	0	3.5
S-2	Chicago	Nov. 30	99.80	2.0	6.6	94.2	14	4.9	0.04	0.05	0.016	0.094	..	13	6.5
Z-6	New York	Jan. 20	99.90	1.5	6.5	94.4	16	4.4	0.05	0.02	0.011	0.019	..	3	6.0
Z-1	New York	Jan. 20	99.90	1.5	6.6	94.7	18	4.8	0.05	0.00	0.008	0.042	..	13	5.0
S-3	Chicago	Nov. 26	99.80	..[2]	6.4	93.4	11	4.8	0.04	0.07	0.009	0.081	..	19	3.5
S-7	Chicago	Nov. 26	99.80	1.5	6.7	94.4	5	5.0	0.04	0.06	0.006	0.094	..	3	2.5
T-3	New York	Jan. 20	99.80	2.0	6.5	93.5	18	4.3	0.04	0.00	0.006	0.154	..	13	2.0
S-6	Chicago	Dec. 1	99.75	1.0	6.9	94.4	8	5.2	0.04	0.11	0.005	0.095	..	5	1.5
S-5	Chicago	Nov. 26	99.80	2.0	6.6	93.4	6	4.8	0.04	0.09	0.005	0.065	..	6	3.0
Y-3	New York	Jan. 20	99.80	1.5	6.5	93.7	11	4.6	0.05	0.05	0.005	0.095	..	3	2.0
AVERAGE			**99.83**	**1.7**	**6.6**	**94.1**	**13**	**4.7**	**0.04**	**0.05**	**0.008**	**0.066**	..	**8**	**3.6**
BEET SUGARS:															
S-14	Chicago	Nov. 26	99.80	1.0	6.0	95.0	40	4.9	0.04	0.00	0.019	0.141	22	32	5.0
S-13	Chicago	Nov. 26	99.80	1.0	6.0	95.8	40	5.0	0.04	0.02	0.026	0.114	12	19	10.0
S-15	Chicago	Nov. 26	99.80	1.5	6.6	95.2	30	5.0	0.04	0.00	0.018	0.142	17	3	6.0
AVERAGE			**99.80**	**1.2**	**6.2**	**95.3**	**37**	**5.0**	**0.04**	**0.01**	**0.021**	**0.132**	**17**	**18**	**7.0**
POWDERED GRADES:															
S-9	Chicago	Nov. 26	99.85	2.0	6.6	94.2	8	5.2	0.03	0.05	0.012	0.058	..	6	4.5
T-8	New York	Jan. 26	99.80	2.0	6.3	93.7	14	4.5	0.04	0.01	0.014	0.136	..	2	1.5
Z-3	New York	Jan. 26	99.90	1.5	6.4	94.5	14	4.8	0.06	0.03	0.003	0.007	..	29	4.0
X-3	New York	Jan. 26	99.85	3.0	6.3	95.0	30	4.8	0.05	0.04	0.006	0.054	..	10	5.0
T-9	New York	Jan. 26	99.85	3.0	6.2	94.1	20	4.5	0.06	0.05	0.012	0.028	..	6	2.5
W-1	New York	Jan. 26	99.85	2.0	6.4	94.1	14	4.6	0.04	0.05	0.010	0.050	..	13	2.5
Z-7	New York	Jan. 26	99.90	2.0	6.3	93.6	18	4.4	0.04	0.03	0.019	0.011	..	6	4.0
Y-4[3]	New York	Jan. 26	95.65	1.0	4.9	...	..	..	0.05	0.04	0.007	3.893	..	..	..
X-1	New York	Jan. 26	99.80	3.0	6.5	94.4	18	4.7	0.05	0.08	0.005	0.065	..	32	2.5
T-7	New York	Jan. 26	99.90	1.5	6.5	93.5	14	4.7	0.04	0.02	0.008	0.032	..	29	5.3
AVERAGE[4]			**99.86**	**2.2**	**6.4**	**94.1**	**17**	**4.7**	**0.05**	**0.04**	**0.010**	**0.049**	..	**15**	**3.5**

[1] A so-called "wet" sugar; dried out when received.
[2] Sample insufficient for test.
[3] Contains 3.77 per cent starch.
[4] Omitting sample Y-4.

Editor's Note—Methods of sampling, screening tests, etc., were discussed in Part I of the Survey, which appeared in the June issue.



Gentlemen, which will you have—light or dark? The thin placques of the hard candy tests graphically illustrate the marked differences in color, transparency and brilliancy obtainable with two similarly-priced confectionery sugars.

The M. C. Survey of
Competitive Refined Sugars

(Part II)

BY ROBERT RANDOLPH

(The Technical Staff of THE MANUFACTURING CONFECTIONER and Others Collaborating)

IN THE preceding installment it was pointed out that although largeness of crystal is by no means prima facie evidence of the strength of a sugar on the lightness of its Candy Test, nevertheless, because of the custom which has grown up among the refiners to make the larger grained sugars from their first boilings, and to reserve these sugars for a critical manufacturing trade, the risk of a confectioner's getting a weak sugar and dark candy from a fine-grained sugar is greater than if he buys one of the coarser-grained varieties.

Proceeding to the proximate analyses of the samples collected in the Survey, we will discuss in the order mentioned:

Direct Polarization,
Percentage of Invert Sugar,
Percentage of Moisture,
Percentage of Ash,
Percentage of Undetermined Organic Matter,
Sulphur Dioxide Content,
Color of the Solution,
Clarity,
Hydrogen-ion Concentration,
Dye Value;

likewise the following analyses of the Candy Tests of these sugars:

Direct Polarization,
Color,
Hydrogen-ion Concentration.

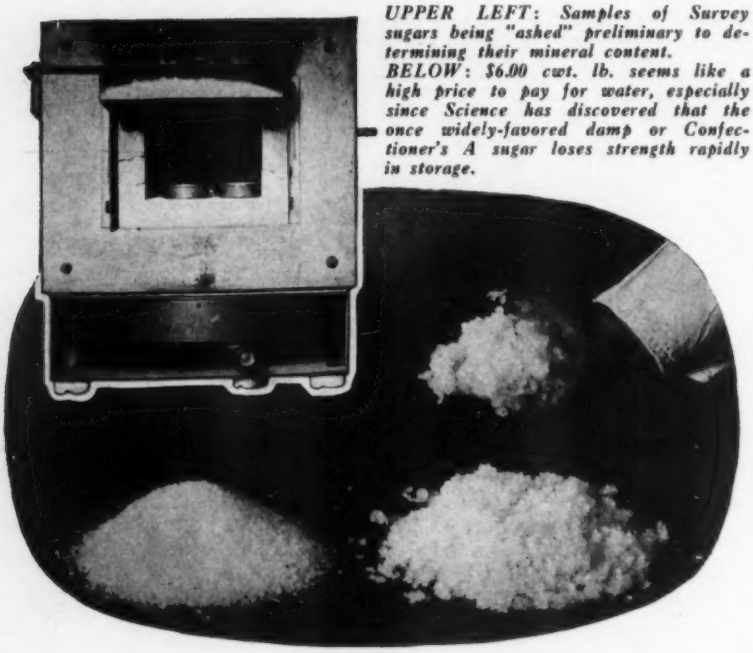
Direct Polarization

(Range 99.75 to 99.90)

Direct polarization is a reading of the actual percentage of sucrose present in the sample; hence, a measure of the *purity* of the sugar.

Except for sample Y-4 (a powdered specimen to which a substantial percentage of starch has been added to prevent caking), all polarization tests will be observed to range between 99.75% and 99.90%. In fact, all except one sample tested 99.80% or better—in itself, a creditable record for any basic raw material. The single test of 99.75 is readily explained by a correspondingly high moisture content of .11, which is about .06 higher than average. This sugar was refined in the Cuban central of an American chocolate manufacturer and has quite obviously taken on this slight additional moisture during the voyage from Cuba. The moisture content of a sugar should always be considered in connection with a low direct polarization.

The purity of the sugars available to us for confectionery manufacture is already so high that it is difficult to see how we can reasonably expect more in a commercial product. In fact, it is not entirely improbable that these modern processes of super-refining sugar may already have been carried *too* far and removed substances with valuable physical as well as physiological properties. So far as it has been possible to determine, it is not the purity of a sugar which governs its working properties in candy, but the *character* of minute traces of mineral and organic impurity remaining behind after the refining process.



UPPER LEFT: Samples of Survey sugars being "ashed" preliminary to determining their mineral content.
BELOW: $6.00 cwt. lb. seems like a high price to pay for water, especially since Science has discovered that the once widely-favored damp or Confectioner's A sugar loses strength rapidly in storage.

Invert Sugar Content

(Range 0.02 to 0.06)

This figure represents the total percentage of reducing sugars present in the sample. Except where a sugar is to be used for crystallizing purposes, and even here it must be of relatively slight consequence, these minor variations in invert content appear to have little influence upon the ultimate working properties of the sugar. They are certainly not the major cause and it may be questioned whether they can even be considered an important contributing cause of the serious losses in polarization which occur during the cooking process. In some instances this has amounted to from 6 to 8% depreciation from the sucrose content of the original sample. This could hardly have resulted from the trifling invert content of the uncooked sugar, especially since we ourselves deliberately "doctor" our batches to prevent graining, and thereby multiply this fraction many times during cooking.

Nevertheless, it is also apparent that we cannot altogether ignore a relatively high invert content in the uncooked sugar since, particularly in the case of damp sugars or sugars which are to be stored for any period, it is a condition which is likely to become aggravated in time. Invert sugars gradually dissociate into acid substances which possess high inverting power, and even this slow breaking-down process may ultimately impair the "strength" of the sugar. Best refining practice countenances an invert content not exceeding .04% (.05% at the most), and sugars found to exceed this tolerance should be carefully examined for other characteristics pointing to the impairment of working or keeping properties.

The only Survey samples observed to contain more than .05% reducing sugars are powdered grades in which the question of strength is not significant. Also, it will be noted that with the exception of Y-1, which we have had occasion to comment upon previously, all coarse-grained samples contain .04% or less of invert.

Moisture Content

(Range 0.00 to 0.11)

Although several samples of "wet" sugars were included in these tests, they had so far dried out by the time they were received for testing that a comparison with the normal moisture content of the corresponding granulated grades cannot be given at this time.

Of course, the obvious significance of a sugar's containing two or three per cent of superfluous moisture is that the confectioner is paying for so much water at the current market price of sugar. The apparently abstract relationship between a damp sugar and a dry sugar may not seem consequential in the manufacture of a product to sell for sixty or eighty cents a pound, but it is nevertheless safe to presume that if the refiners should bill out these "A" sugars in such a manner as to make it perfectly clear to their customers that on a dry basis these grades were commanding a premium of say .15 or .20 per cent over the corresponding granulated grades, some of the die-hards who are still using wet sugars would probably relapse into a coma.

The former widespread popularity of these sugars was based upon the stubborn myth that only wet sugars could be strong sugars and that in some uncertain manner this strength became "killed" during the process of granulating. The belief that caramelization and inversion occur to a noticeable extent during drying is not supported by these analyses. (See samples W-5, X-2 and Z-5, and compare with the corresponding granulated grades W-3, X-6 and Z-2.)

On the other hand, there is ample evidence to be had that sugar and water do not always get along well together. For instance, it is impossible to dissolve sugar in ordinary cold water without producing a small amount of inversion. The inversion is more rapid in hot water than in cold water.

Damp sugars are notoriously bad "keepers," gradually losing strength in storage, due to sweating and inversion. A low pH, or the presence of other inverting agents, will greatly accelerate this process of decomposition.

It is not difficult to understand, therefore, why the custom of buying damp sugars has been rapidly passing into disrepute among the more progressive confectionery manufacturers.

Ash

(Range .001 to .026)

A minute but seemingly potent factor in determining the subsequent behavior of a sugar in the batch. This reading is an indication of the percentage of mineral salts present in the original sugar. These salts originate from various sources and it is their character rather than the extent to which they are present which appears to determine the significance of the ash in the manufacture of candy.

Many of these salts occur naturally in the cane or beet; others are introduced by particles of dust in the air; through contact with the refining equipment; result from the addition of clarifying or defecating agents; or consist of sodas which have been added for neutralizing or standardizing purposes.

These salts may be active inverting agents and thus hasten the decomposition of the sugar during cooking; or they may be helpful "buffer" salts whose influence is to retard the activity of the hydrogen-ion and thus preserve the strength of the sugar.

Following is the average ash content of the different gradings of sugar as classified by the Survey:

Coarse-grained	*Fine-grained*	*Powdered grades*	*Beets*
0.003	0.008	0.010	0.021

Disregarding the powdered grades which are not ordinarily employed for cooking and where abrasion in milling necessarily entails an increase in the mineral content of sugars which might normally possess a low ash, we find that, generally speaking, the larger the crystal, the lower the ash; beets averaging several times the mineral content of the cane samples.

There are perhaps two reasons why coarse-grained sugars might reasonably be expected to average lower in mineral content than fine-grained sugars. The first is the tendency of the crystal toward self-purification, larger crystals requiring more time to form; the second is that large-grained sugars are usually crystallized out of first boilings which have consequently been subjected to less handling and contamination during manufacture.

The relation between the character of the ash and subsequent discoloration of the sugar in the Candy Test was shown by J. A. Ambler (Bureau of Chemistry), who produced dark-colored candy through the addition of slight traces of iron chloride.

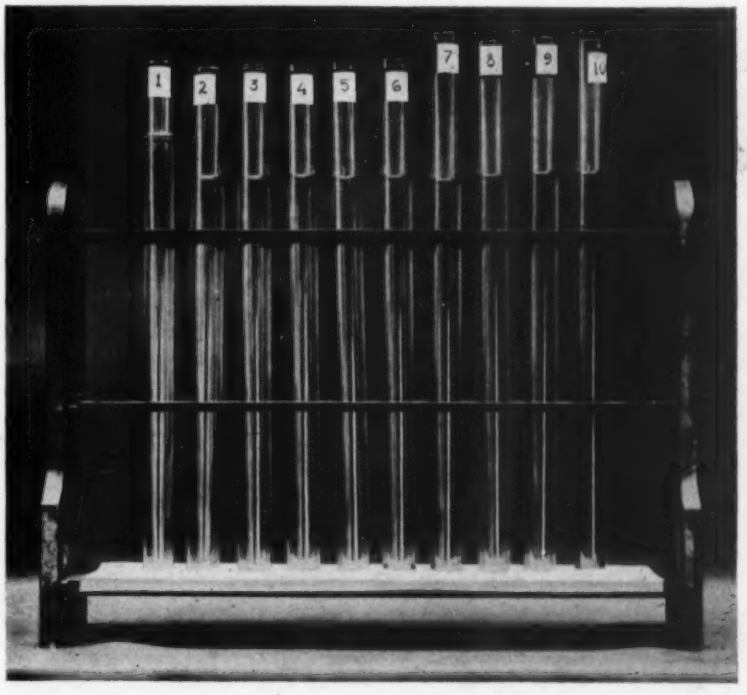
Lime and potash salts are particularly destructive of color and are present in beet sugars in fairly substantial amounts. Compounds introduced during the usual liming process can only be removed with the greatest difficulty and it is these impurities which are held to be responsible for the serious discoloration of beet sugars in the Candy Tests. (Samples S-13, S-14 and S-15.)

The normal constitution of the ash in centrifugal raw cane sugars, varying proportions of which impurities find their way into the refined products, is given in a paper presented by John W. Schlegel and A. Weber before the Division of Sugar Chemistry of the American Chemical Society, Philadelphia, Sept.. 6-11, 1926, as follows:

	Forming:		*Per cent of total ash*
Solid Constituents	Potash compounds	K_2O	32.35
	Sodium compounds	Na_2O	2.03
	Lime compounds	CaO	15.94
	Magnesium compounds	MgO	4.37
	Iron-aluminum comp.	Fe_2O_3-Al_2O_3	3.23
	Silica compounds	SiO_2	6.58
	Phosphates	P_2O_5	3.89
Gases	Sulphates	SO_3	10.19
	Chlorides	Cl	2.82
	Carbonates	CO_2	19.42
			100.82
		O in XS of Cl	0.63
			100.19

How these various groups are combined in the sugar before it is ashed; whether the lime salt, for instance, occurs as calcium carbonate, calcium sulphate or calcium chloride—this is something which we do not know definitely and can only surmise. Neither do we know to what extent or in what manner the organic impurities burned off during the ashing process were combined with these mineral compounds. Yet it is not unlikely that these as yet unidentified combinations are the real factors which determine the behavior of sugars in the candy kettle.

What we do know is that certain



Color is determined by reference to a set of arbitrary Nessler tube standards. Each tube represents a 4-point gradation in color from the tube preceding. No. 10, the darkest standard, equals 40 in the chromatic scale employed in these tests.

Beet sugars which have been standing in an air-tight container for any length of time possess a characteristic organic odor.

of these possible combinations will hasten decomposition, while others, such as sodium acetate and ordinary soda, possess valuable "buffer" properties which result in the whitening and strengthening of the sugar to which they are added. The latter may be readily demonstrated by the addition of soda to sugar in the proportion of 1 part to 100,000 (.001%).

It is thus evident that, although an abnormally high ash may prove to be anything but fatal so far as a sugar's working properties are concerned, it is nevertheless indicative of a condition which should be looked into—especially in connection with the pH and clarity of the sugar and the loss of polarization which takes place during its Candy Test. For example, if a high ash is accompanied by poor clarity, it may merely signify the presence of colloidal matter. In all probability such substances would not be active inverting agents and are, therefore, quite harmless so far as cooking properties go. On the other hand, should we find our high ash reading accompanied by a serious loss of polarization in the Candy Test when the pH of the sugar is so high as to preclude its being entirely responsible for the inversion, we must look to the constitution of the ash for the key to our troubles.

(A low percentage of ash will make a sugar more adaptable to the purpose of a more *completed* inversion than a sugar in which this constituent is high. However, this factor, namely, the completeness of inversion, is chiefly applicable where the sugar is to be entirely inverted, as in commercial invert sugar.)

Undetermined Organic Matter

(Range .005 to .154)

This reading is apt to be a trifle misleading, since it represents the difference between 100% and the sum total of sucrose, invert, moisture and ash. It therefore includes, in addition to undetermined organic impurities, the cumulative result of any errors which may have occurred in the preceding analyses.

The tests range from .005% to .154%. The higher tests were rechecked. The higher readings are apt to indicate carelessness on the part of the refiner, the sugars being poorly washed in the machines and consequently giving lower polarizations and high organic content.

Sulphur Dioxide

(Range .000 to 22.0 parts per million)

The method for the determination of sulphur dioxide which was found to be present in the samples of Beet granulated was as follows:

> The sugar solution was distilled in an atmosphere of pure carbon dioxide, oxidized with hydrogen peroxide and subsequently precipitated as Barium sulphate.

The significance of this constituent of beet sugar is that the fumes from burning sulphur have been used in order to procure a whiter product. It will be observed, however, that this bleach cooks out, revealing the natural darker color of the product in the practical Candy Test. (Samples S-13, S-14 and S-15.)

Color

(Range 0.0 to 4.0)

Colors were determined by reference to a set of arbitrary caramel standards, numbered from 0 to 40. Zero represents the color of distilled water, while 40, the darkest shade, is amber. We do not believe that any particular reference to the significance of color in sugar is necessary. The solutions which were prepared from the Survey samples ranged from transparency to 4, the darkest sample (X-4) being gray white, lacking in brilliancy, but otherwise without color dark enough to be visible to the naked eye. A relatively high color value in the natural solution is in most instances reflected in a correspondingly high color in the subsequent Candy Test. However, many light colored solutions developed serious discoloration in cooking due to other causes.

Clarity

(Range 0 to 32)

Clarity, or more properly its inverse, turbidity, was determined by comparing a solution of the sugar in question with standard suspensions of colloidal clay of different degrees of turbidity. The numerical results given express this turbidity as parts of colloidal clay per million.

The importance of clarity in the manufacture of a product such as clear hard candy, for example, is plainly manifest. Poor clarity may result from poor clarification in the refinery, poor after-working of the product, or contamination due to the method of packing or sampling. This reading is of value in that it frequently throws light upon the character of defects encountered elsewhere in the analysis.

pH

(Range 6.0 to 7.2)

The hydrogen-ion concentration was determined in a 60° Brix solution, using the colorimetric method previously described in these pages. A pH value of 7.0 represents neutrality; anything above 7.0 represents alkalinity; while figures below 7.0 represent acidity. These figures for the hydrogen-ion concentrations do not indicate the *amount* of acid present, but the *degree of dissociation* of the acids present. The test has hitherto been regarded as of great value in determining the subsequent action of a sugar as regards inversion.

Until very recently it has been the generally accepted theory that the inversion of sugar during boiling is directly proportional to the hydrogen-ion concentration, the hydrogen-ion being assumed to be the most active inverting agent present. However, in the light of recent knowledge, it has become necessary to qualify this premise to admit of certain salts possessing the power to enormously retard the activity of the hydrogen-ion. This may explain why a sugar such as S-13 with the relatively low pH of 6.0 was, nevertheless, capable of producing in the Candy Test the highest direct polar-

ization of any sample in the Survey (95.8%).

It is also apparent that other factors such as the impurities described must be much more active in producing inversion during cooking than the generally suspected and much-maligned "pH." Sample S-12, with an *alkaline* pH value (7.2), suffered a loss in polarization of nearly 7% as against a loss of only 4% for the 6.0 pH sample just referred to.

As a result of these tests, it seems impossible to establish any rational relation between the pH of the original sugar and loss of polarization in cooking.

Dye Value

(Range 1.0 to 10.0)

The Dye value was determined by measuring the amount of dye necessary to neutralize the electrical charge of the colloidal matter present in the sugars. This value is, therefore, an approximate measurement of the amount of colloidal material present, and is expressed in terms of the weight of dye required per 100,000 parts of the sugar.

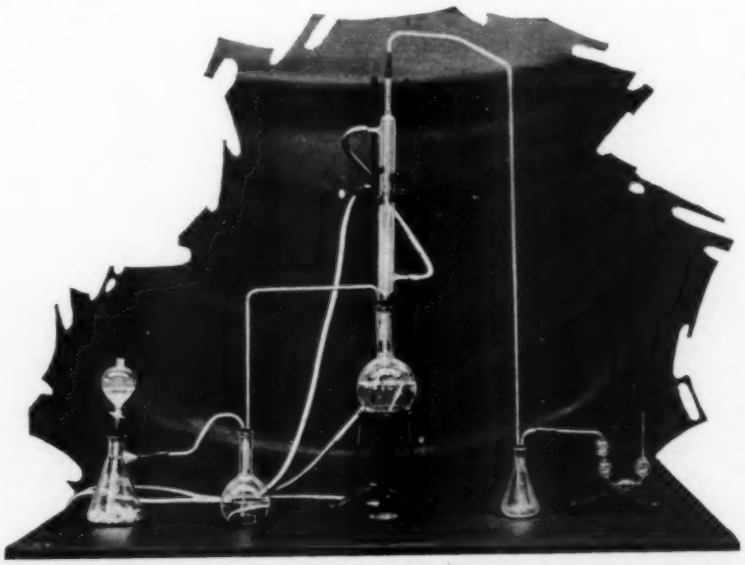
The Dye value being an approximate indication of the amount of entrained colloidal matter within or upon the sugar crystal, it is, therefore, a *measure of the purity of the sugar crystals.*

A Practical Summary of the results of the Survey:—

	Average of 17 fine-grained sugars*	Average of 18 coarse-grained sugars
Candy Test:		
Direct polarization (a measure of the *strength* of the sugar)	94.2	93.5
Color of candy	12.8	7.6
pH of candy	4.8	4.6
The Sugar:		
Direct polarization	99.84	99.81
Reducing sugars	.043	.036
Moisture	.05	.03
Mineral impurities	.008	.003
Organic impurities	.065	.066
Color	1.77	.53
Clarity	8.0	8.0
pH	6.6	6.5
Dye value (measure of colloidal impurities)	3.7	3.0

*Excluding powdered grades and beet granulated.

The fact that a high polarization in the Candy Test is in every instance accompanied by a Dye value of 5 or over, and that the lower polarizations are accompanied by correspondingly low dye values, gives point to the theory that this colloidal organic matter may be one of the factors responsible for retarding the inversion. (Note especially samples X-4, Z-1, X-3 and beet granulated S-13, 14 and 15.)



Determining the amount of sulphur bleach present in samples of beet granulated. Sulphuring is not resorted to in the manufacture of cane sugars.

The Candy Test

(Range: *direct polarization,* 92.2 to 95.8; *color of candy,* 3 to 40; *pH of candy,* 4.2 to 5.2)

The purpose of the Candy Test is to determine how the product will act when used in the manufacture of candy. The test was made in the regular manner by a method which has been erroneously ascribed to different persons, but which was originally worked out by Dr. Hooker of the American Sugar Refining Company, and it is undoubtedly to him that credit for this method is due.

The method for making the Candy Test was as follows:

One-half lb. of sugar plus 87 c.c. distilled water are placed in a copper casserole and heated to boiling, with constant stirring. As soon as the mass is boiling, the casserole is covered. After the heating has continued for precisely 15 minutes, the cover is removed and the solution is constantly stirred and heated until the temperature reaches exactly 350° F. The casserole is then removed from the flame and poured onto a copper slab and allowed to cool. The resulting candy is broken up and subjected to analysis in the usual manner.

The direct polarization of the candy is the approximate percentage of unchanged sucrose remaining in

the candy. For purposes of candy manufacture, it is assumed that the higher this direct polarization, the stronger the sugar which has been used, whereas the lower this polarization, the weaker the sugar. The test for the color of the candy was made in exactly the same manner as for the sugars themselves. The hydrogen-ion concentration of the candy was also made as in the case of granulated sugar. The significance of the color and hydrogen-ion concentration of the candy are so self-evident that further elaboration is hardly necessary.

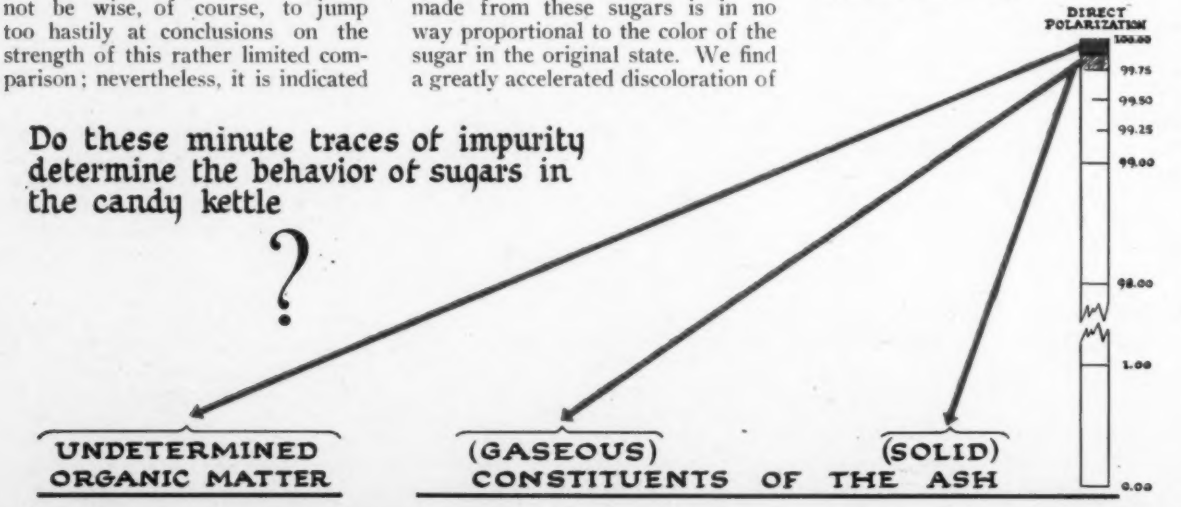
Summary

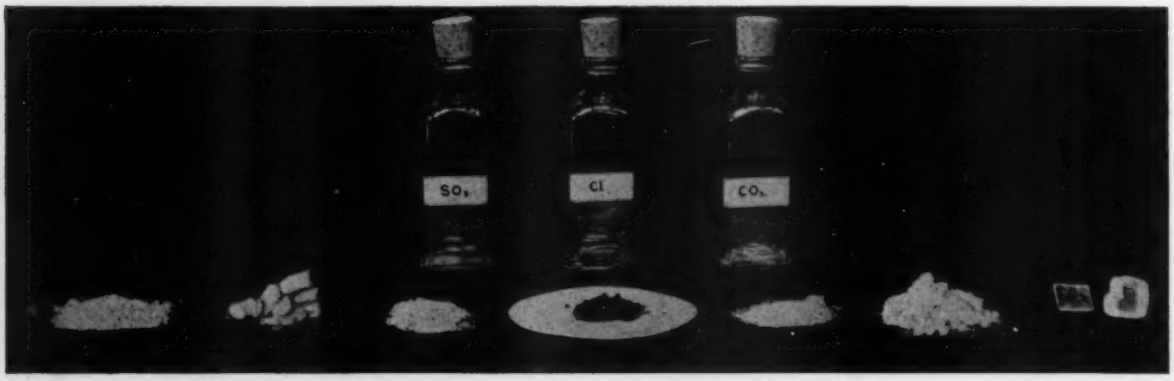
This summary reveals a singular fact, and, in so far as the relative strength of these two groups of sugar is concerned, a condition which is quite the reverse of what we may have been led to expect. Instead of averaging lower in polarization as we have always supposed, these fine-grained sugars actually show up stronger in the Candy Test than the coarse group. It would not be wise, of course, to jump too hastily at conclusions on the strength of this rather limited comparison; nevertheless, it is indicated that we may have to make some sort of revision of our opinions as to the nature of the factors responsible for the breakdown of these sugars when subjected to cooking.

In the manufacture of candy at least, sugar is nearly always cooked with some other ingredient, such as corn syrup. Otherwise, the lighter color of coarse sugars might reasonably be concluded to be at the expense of strength. But the addition of these ingredients influences the pH of the candy batch to a marked degree, and consequently interferes with the normal action of the mineral and colloidal impurities present in the sugar. (These impurities are represented by the ash and dye value respectively.)

It is obvious that mineral or organic impurities, or both, are far more potent factors than the generally suspected "pH" in determining what loss of polarization will take place during cooking. If further confirmation of their influence is desired, it is manifested by the fact that the increased color of candy made from these sugars is in no way proportional to the color of the sugar in the original state. We find a greatly accelerated discoloration of the fine-grained sugars in the Candy Test and this phenomenon is most readily explained by an ash content almost three times as great as in the coarse-grained sugars.

Averages given for the organic impurities are really not significant because of the wide variations which go to make them up. So far it has not been possible to determine the character of these impurities. It is interesting, however, to note that some of the strongest sugars—the samples of beet granulated, for example—run highest in undetermined organic matter and highest in dye value. But whether the loss of strength as evidenced by the Candy Tests is due to the removal of helpful substances by an over-efficient refining process, or to the natural absence of sundry "buffer" salts from certain types of sugars, we can only conjecture. A laurel wreath still awaits the scientist who can show us how to purify sugar while retaining a maximum of all three requisites for good candy—*color, brilliancy* and *strength*.





Flavor-Blending—(Continued from page 47)

to the majority except as they may be present in the compounded flavors they employ.

The experience of the perfumer offers many suggestions to the flavorist. The blending of a satisfactory perfume demands among other things, the use of two widely different classes of ingredient, the heavier or less volatile type, which serves to give lasting power and to blend the ingredients together; and the lighter, more volatile ingredients which supply the top note. The former come under the loosely-defined and much-misunderstood classification term of "fixatives." To what extent similar agents are necessary in compounding candy flavors, is something of an open question, certainly as regards centers, icings and other confections which are not exposed to heat. However, in blends designed to be used in such confections as hard candies, it is evident that suitable means must be found to make the flavor reasonably permanent under the difficult conditions to which it will be subjected during the course of candy manufacture.

There is still another established principle of the perfumery trade that should prove useful in the candy field. Perfumes built up from purely synthetic materials are rarely if ever satisfactory. They lack the fineness and delicacy which is imparted through the use of a reasonable proportion of natural floral extractives.

In working out blends for candy it will prove advisable to avoid so far as possible the so-called "ether" types based largely if not entirely on the artificial esters and aldehydes. Strength they possess, and usually great lasting power. But the flavor is likely to be crude and far from agreeable unless something of a different character is added to soften it.

Relation Between Flavor and Odor

We cannot go further without some discussion of the relation between flavor and odor, notwithstanding the fact that we are limited in this discussion by an unfortunate lack of exact scientific knowledge on the subject apart from the unquestioned fact that such a relationship exists. Certainly if we except high-powered cheese and a few similar foods, judge the flavor of what we put in our mouths very largely by odor. We have a well-defined reluctance to taste anything the smell of which is not agreeable, and stimulating to the appetite either by suggestion or otherwise. The human memory is fallible in most respects but our memory of odors is astonishingly acute. A mere whiff of some once-familiar odor will bring to mind a whole chain of recollections associated with it. No candy flavor will ever be successful, which calls to mind an unpleasant association; nor will any blend the odor of which is not agreeable, appetizing and stimulating, ever meet wide approval.

Even this introductory approach to a little known subject cannot be closed without an admission that the merchandising aspect of flavor-blending is of paramount importance. It is not enough to perfect new and attractive flavors. They must then be popularized and sold to the public in the ultimate form of candy. It has undoubtedly been the general reluctance to take the risks involved that has retarded progress in the field of candy flavors. This reluctance is natural and human, but is it based upon any thing but timidity in the face of the new and the untried? Apparently not, as there is nothing in the history of modern merchandising to lead to the belief that a meritorious product properly presented to the public, will not be as successful as it deserves to be.

(This series by Mr. Stoddard will be continued in subsequent issues of the MANUFACTURING CONFECTIONER. *The subject of candy flavor-blending is wholly new and fascinating. Watch for succeeding installments.—The Editor.)*

A. M. Ramer Company and Allen-Qualley Company Merge

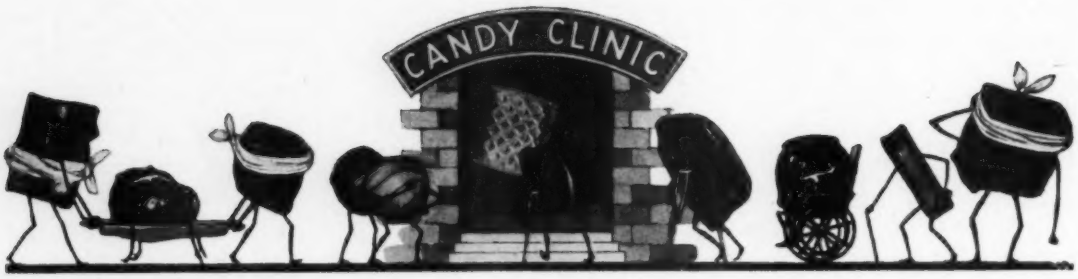
A joint announcement of unusual interest was made today by George H. Ramer, president of the A. M. Ramer Company, and John Hall Allen, president of the Allen-Qualley Company, both of St. Paul, and both concerns engaged in the manufacture of candy.

A joint manufacturing arrangement has been made by the two companies to manufacture the requirements of both concerns. A new corporation has been formed, to be known as the A. R. Candy Company, owned by both companies equally, to manufacture exclusively for the Allen-Qualley Company and the A. M. Ramer Company. Owing to the unusual facilities the manufacturing will be done in the Ramer building, at the corner of Grove and Olive streets. The officers, sales and clerical organizations of each company will continue as heretofore, and there will be no change in the management of either company.

The A. M. Ramer Company began business in Winona, Minnesota, in 1894, and was incorporated under the laws of the state of Minnesota on March 7, 1901. The company is one of the largest manufacturers of high-grade chocolates and their products are widely known throughout the United States and in certain foreign countries where considerable export business has been developed. On January 1, 1920, they moved their business to their new plant located at the corner of Grove and Olive streets, St. Paul.

The Allen-Qualley Company was founded in 1915 and started to manufacture in a small building on the West Side. The rapid development in business caused them to build and move into a new addition to the Allen building at 6th and Broadway. The Allen-Qualley Company has had a steady growth since its inception, and during the last few years has marketed, nationally, two 5c bars—Nut Etta and Junior. A few years ago it was necessary to move to even larger quarters and they have occupied the Allen building at 6th and Broadway since that time. They manufacture bulk, high-grade box candies and bar candy, and distribute their candy to every state in the Union.

The officers of the A. M. Ramer Company are George H. Ramer, President and Treasurer; R. M. Winslow, Vice-President and General Manager; Fred H. Ramer, Secretary. The officers of the Allen-Qualley Company are John Hall Allen, President; Stan C. Coumbe, Vice-President and General Manager; Harry G. Allen, Secretary and Treasurer.



The Candy Clinic is conducted by one of the most experienced superintendents in the candy industry. Each month he picks up at random a number of samples of representative candies purchased at retail in various sections of the country. This month it is hard candies; next month it will be "pocket" packages. Each sample represents a bona-fide purchase in the retail market, so that any one of these samples may be yours.

This series of frank criticisms on well-known, branded candies, together with the practical "prescriptions" of our clinical expert, are exclusive features of the M. C.

Hard Candies

Following is my confidential report on samples of plastic and clear hard candies purchased at retail in Boston, Chicago and New York City.

Sample PM—10

Made in Chicago.
Purchased in Boston.

How sold: 2½ oz. jars—25c. Assorted hard candies.

Appearance: Very good. Straight jar used, clamp top. Small, neat seal.

Gloss: Very good.

Assortment: Fair. Not enough white used, and too much red.

Brcken: Peanut pieces.

Impressions: All very good.

Jackets: Too thick on clear goods. Fair on pulled goods.

Flavors: Not of good quality. Practically all tasted as though synthetic flavors were used. Pickle tasted rancid.

Centers: Very little used and jelly centers not good; almost black.

Colors: Good.

Stripes: Very good.

Remarks: This candy is not up to standard. The price is sufficient to warrant making this a high grade package of candy.

Sample TH—10

Made in Chicago.
Purchased in Chicago.

How sold: ½ lb. jar; assorted filled confections.

Appearance: Good. Straight fancy jar. Upressit cap. Small, neat label, and small print.

Dust: None.

Gloss: Very good.

Impressions: Good.

Colors: Good. Green a trifle too deep and peanut a little too yellow.

Flavors: Good.

Jackets: Very good as to thickness, but not enough flavors used in jackets.

Centers: Very good tasting and a reasonable amount used. Shell center a little strong; tasted old.

Stripes: Very good workmanship. Suggest the piece with the blue stripe be left out, as it did not look good.

Assortment: Very good.

Remarks: This is a good-looking filled confection assortment and makes very good eating. A few jackets lacked flavor. Suggest a little more flavoring be used in the jackets. Where green color is used, suggest that it be cut down a little and that a green be used which hasn't so much blue in it. The yellow color was also a little too deep.

Sample ML—10

Purchased in New York City.

How sold: 1 lb. jar; ass't. filled confections—60c.

Appearance: Very poor. Straight shoulder jar, plain screw cap. Label too large.

Dust: None.

Gloss: None. Gloss completely gone, partly grained.

Impressions: Good.

Flavors: Hardly any used in jackets. Centers had flavors but were of very poor quality.

Jackets: All too heavy.

Centers: Ate like chewing gum. Very poor.

Colors: Fair. Yellow too bright.

Stripes: Very good.

Size of pieces: Good.

Assortment: Not good. Too much red and green used.

Remarks: This is a very poor looking jar of Filled Confections, and I doubt if very much of it will be sold, even at the price. These goods are fit for cheap chain grocery store trade only and are not suitable for sale in the high-class drug chain in which they were found.

Sample RU—10

Made in Cambridge, Mass.
Purchased in Boston.

How sold: 1 lb. jar; ass't. hard candies—60c.

Appearance: Fair. Shoulder glass jar; large, plain, printed label; cheap-looking. Name too large on label. Plain cap.

Gloss: Good.

Assortment of colors and shapes: Good. A few pieces too large. Too many white pieces.

Impressions: Not very good. Some pieces almost smooth.

Jackets: Almost all too heavy and not even.

Flavors: Very little in jackets and of cheap quality.

Centers: Very little center used in any piece. Raspberry Jelly was very hard and ate like rubber; very poor raspberry flavor

and entirely too much acid. Satin Squares were almost solid. Could not tell what the center was. Balance of centers were passable.

Colors: Green entirely too deep. Red raspberry too light and had spots. Most clear red pieces had small spots. Shell looked as if blue color was used, causing piece to look inedible.

Stripes: Only four pieces striped, and these were carelessly done.

Remarks: These goods are not up to standard even at 60c a pound.

Sample AP—10

Made in Boston.
Purchased in Boston.

How sold: 4¾ oz. jar; ass't. filled hard candies—25c.

Appearance: Good. Straight jar and screw cap. Neat label.

Gloss: Partly gone.

Assortment: Good.

Broken: None.

Impressions: Not good. Peanut was the only good one.

Jackets: All entirely too heavy.

Flavors: Exceptionally good.

Centers: Very good, but not enough used.

Colors: Very good.

Stripes: Very good.

Remarks: If sufficient center were used, this would be a high grade candy.

Sample NV—10

Purchased in Brooklyn, N. Y.

How sold: 8 oz. jar; assorted hard candies—35c.

Appearance: Fair. Glass jar, blue screw cap. Neat label (shoulder jar).

Dust: None.

Gloss: None.

Flavors: Fair. Pieces colored green had no flavor at all. Buttercup jackets had no flavor. Orange very faint. Cassia too strong.

Centers: Buttercup centers all very hard; very small quantities used.

Colors: Green entirely too deep. One piece had a violet stripe and looked pretty poor. Balance of colors good.

Stripes: Carelessly put on; some too wide.

Size of pieces: Cassia pieces too small. Balance good.

Assortment: Good, if the candies were flavored properly and more care taken in their manufacture.

Remarks: At 35c this jar is not up to standard. The pieces could hardly be taken from jar; either the goods were cooked too low or they were packed in a damp room.

Sample HY—10

Purchased in New York City.

How sold: ½ lb. tin assorted hard candies—40c.

Appearance: Good. Round tin used. Neat label.

Dust: Considerable. Some pieces broken. Tin too large, or more padding should be used.

Gloss: Partly gone.

Flavors: Very good.

Centers: All solid pieces.

Colors: Good.

Stripes: Good.

Size of pieces: Rock too large. Balance good.

Assortment: A little too much white used.

Remarks: This hard candy is one of the best examined. Workmanship was good and good flavors were used.

Sample PS—10

Made in Cambridge, Mass.
Purchased in Boston.

How sold: ½ lb. tin assorted hard candy—50c.

Appearance of package: Very neat. Round tin used and well sealed. Label very neat.

Condition of candy on opening tin: Very good.

Appearance of candy: Good, a little dusty and a few pieces broken. This tin could be a little smaller to prevent candy from shaking around.

Gloss: Partly gone, due to the dust.

Assortment: Fair. A few more filled pieces would help this assortment.

Workmanship: Fair. Pieces not spun out evenly and edges not good on some.

Flavors: Very good.

Colors: Fair. Green and orange a little too deep.

Stripes: Fair. Some too large. Evenly put on.

Remarks: These goods ate very well and the flavors were excellent, although it would not do for jar goods.

Sample F—10

Made in Boston.
Purchased in Boston.

How sold: 4 oz. jar assorted sticks—25c.

Appearance: Very good. Label small and small print used. Neat looking. Plain round jar used, colored cap.

Gloss: Good.

Assortment: Very good; seven flavors.

Workmanship: Very good, both for size and spinning out.

Broken: None.

Flavors: All good except wintergreen, which was entirely too strong.

Colors: Very good.

Stripes: Neatly done.

Remarks: This is one of the best jars of sticks I have examined.

Sample BS—10

Made in Philadelphia.
Purchased in Boston.

How sold: 4 oz. jar satin finish sticks—25c.

Appearance: Fair. Some sticks too short, which made jar look partly empty. (Straight jar, screw top.)

Gloss: Fair.

Assortment: Good.

Workmanship: Fair. Spinning out not very good.

Broken: Two pieces.

Flavors: Lemon and lime very weak. Balance good.

Colors: Green and yellow too deep.

Stripes: Very carelessly done. Entirely too large on all sticks.

Remarks: More attention should be paid to the striping and flavoring of these goods. Also more care should be taken to see that all pieces are cut to the same length.

Sample L'—10

Purchased in Chicago.

How sold: Bulk ½ lb. Lemon Drops—23c.

General appearance: Good.

Gloss: None. Sugared.

Flavor: Very good. Acid used.

Size of pieces: 90 pieces to the pound.

Colors: Too much yellow used.

Remarks: Lemon drops were in good condition and stood up well after being left in the open for two days, demonstrating that the only way to handle Hard Candy in bulk during the summer months is sugared.

Sample L'—10

Purchased in Chicago.

How sold: Bulk Coconut Chips —29c lb.

Appearance: Good. Macaroon coconut used for coating.

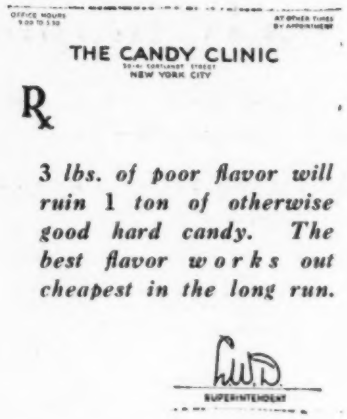
Jacket: Molasses.

Center: Sponge, coconut worked into sponge.

Color: Very good, light molasses.
Flavor: Very good.
Size: 1¼"x¾"x1/32".
Remarks: This is fine piece of hard candy and made excellent eating.

Sample UD—10

Bought in the Sugar Bowl, New York City. This candy was handled in 5-lb. tins and measured out as wanted. A half pound sample was purchased, which was put into a paper bag.
How sold: Bulk assorted hard candies—60c lb.
Appearance: Very good.
Gloss: Good.
Flavors: Fair. Lemon, orange and anise did not taste good. Tasted as though the goods were really old.
Colors: Good.
Stripes: Very good.
Size of pieces: Good.
Assortment: Very good.
Remarks: Although this hard candy was of fair quality, selling it during the summer in paper bags is not the proper way to handle it. All pieces


THE CANDY CLINIC
NEW YORK CITY
℞
3 lbs. of poor flavor will ruin 1 ton of otherwise good hard candy. The best flavor works out cheapest in the long run.
SUPERINTENDENT

were stuck together the following morning. This method of selling would be all right for the winter months, but should be discontinued at the approach of warm weather.

Sample OD—10

Purchased in Chicago.
How sold: Bulk Lemon Drops—39c lb.
Appearance: Good.
Gloss: None. Sugared.
Flavor: Good.
Color: Good.
Size of pieces: 125 to the pound.

Sample L'—10

Purchased in Chicago.
How sold: 3 oz. jar Tart Cuts—15c.
Appearance: Good. Packing very good.
Gloss: Very good.
Flavors: Very good.
Colors: Good.
Striping: Very good.
Size of pieces: Very good.
Assortment: Good.
Remarks: This jar at 15c is excellent value. Both jar and candy are of very good quality.

Sample G'—10

Purchased in Chicago.
How sold: 3 oz. pkg. Lemon Drops—10c.
Appearance: Good. Neatly put up. Cellophane-wrapped.
Gloss: None. Sugared.
Flavor: Lemon slightly rancid.
Size of pieces: 125 to the pound. Round shape.
Color: Good. Very little yellow used.

(*Continued in next issue*)

The Clinic Superintendent Puts in a Word About the Manufacture of Hard Candies

IT IS false economy not to use the best flavors you can get. Flavor is what makes repeat business repeat. Keep all your flavors in a cool place, not in a hot cooking room where they are likely to deteriorate. Keep after the men to keep corks in the bottles. They will forget unless you watch them. No matter how good your flavors may be to start with, if your men persist in leaving the corks out or losing them, your flavors will lose their original fragrance and spoil very quickly. The best way is to tie the cork to the neck of the bottle. Also make your men use graduates. Pouring flavors out of a bottle onto the batch is not a satisfactory way to flavor a batch; either you have too much flavor or not enough.

The quality of the slab oil you use is more important than most candymakers realize. Get a good, pure, white mineral oil that will not gum up your slab or give your batch a rancid flavor. This oil will cost a little more, but it will be worth it in the long run. How much of it are you apt to use in a year, anyway?

Striping and coloring should be done with real care. First sales are on looks. If your stripes are uneven or large, your goods will not look good. If you have one or two real deep colors it will spoil the appearance of the entire assortment.

In making up assortments, approximately equal proportions of the various colors appear to work out best. If you are making filled goods, use sufficient center and make them soft enough to eat well. For jar goods it is not desirable to use very small cuts, as they seldom look attractive and, as a rule, settle to the bottom of the jar, causing dust and broken pieces.

When packing jars, try to have your goods sufficiently well assorted so that three or four pieces of a kind do not get together in one spot. During the summer months it is well to use a paraffin disc sealed securely into the finish of the jar as an additional insurance against spoilage.

If you are making up a large number of jars ahead, be sure to keep them in a dry room with temperature not over 60° F.

Hard candy should never be packed in jars while it is sticking. It will lose its shine and settle down, causing the jar to look only partly filled. There are several other don'ts which are the common property of every well-organized packing room. Don't pound jars on the table when filling. Use hands or a rubber mat.

Don't leave jars standing around with caps off.

Don't pack the jars in a room that is not dry.

When goods are packed and put into cartons, watch that the stock room boy doesn't throw them from place to place. He will if you don't watch him. Handle them with care and you won't have a lot of broken pieces and dust.

Hard Candy Roundtable

Discussion Centers on the Practicability of Devising Series of CANDY SCORE CARDS

PART of the job of putting the industry on a scientific basis is to formulate a series of standards by which the purchase of different classes of candy may be judged. For despite numerous variations novelties deliberately introduced by the manufacturer into his line in order to take it out of the usual "garden" variety, and make it distinctive, there will always be certain earmarks of quality recognized within the industry and it remains for the manufacturer to define these standards for the benefit of those who buy his candies.

The average candy buyer, and it holds true whether he is a jobber or the buyer for a large retail establishment, is often misled into buying inferior merchandise solely because he has never been educated to appreciate the fine differences in quality which every manufacturer has learned to recognize almost instinctively. The future of the candy industry rests on our ability to teach these buyers how to discriminate between products of similar description but varying quality.

Take plastic hard candies, for example, how many buyers do you suppose understand the fine nuances of gloss, die-stamping, jacket construction, flavor, keeping quality, color, assortment or consistency and sufficiency of center? Not very many. Yet it is essential that they be taught to appreciate these things as a preliminary to building up their own sales to the consumer and ultimately, the manufacturer's sales to them. "Standardization of ideas" must result before the industry can proceed on a healthy and economic basis.

Since no change or progress in the present methods and practices of evaluating candies will ever come about by sitting back and waiting for the other fellow to do something about it, THE MANUFACTURING CONFECTIONER has again taken the initiative by preparing for the consideration and criticism of its readers a Plastic Hard Candy Score Card. Similar means of evaluating manufactured products have been employed elsewhere for a number of years, and although the attempt to apply the score card principle to the candy industry is frankly an experiment, the editors of THE MANUFACTURING CONFECTIONER are convinced that it presents educational possibilities of an unusual and decidedly worthwhile character.

The following preliminary draft of the Plastic Hard Candy Score Card was sent to a selected list of manufacturers for their criticism and com-

(Tentative Form)

SCORE SHEET FOR PLASTIC HARD CANDIES

Date.....

Description of Sample.....

Manufactured by .....

Offered by .....

Price..... Identification Number.....

		Perfect Score		Quality Score of This Sample
(1)	**APPETIZING APPEARANCE (30 Points)**			
	(a) Finish (gloss)	7		.....
	(b) Character of Die Work	5		.....
	(c) Color	5		.....
	(4) Striping	3		.....
	(e) Jacket	4		.....
	Thickness of Jacket	2		
	Evenness of Jacket	2		
	(f) Mixture	3		.....
	(g) Dust or pieces	3		.....
			30	
(2)	**EATING QUALITIES (30 Points)**			
	(a) The Bite (or crunch)	10		.....
	(b) Flavor of Jacket	5		.....
	(c) Character of Center	10		.....
	(d) Flavor of Center	5		.....
			30	
(3)	**KEEPING QUALITIES (15 Points)**		15	.....
			75	
	(When only the physical merit of the candy is to be considered, perfect score—75)			
(4)	**TURNOVER POSSIBILITIES (15 Points)**			
	(a) Established popularity of product		7	.....
	(b) Merit of container		8	.....
	(b1) Protection of Product	3		.....
	(b2) Utility of Container	1		.....
	(b3) Selling power of Package	4		.....
		8		
(5)	**SOURCE OF SUPPLY (10 Points)**			
	(a) Reputation of Manufacturer (ethics, service, etc.)		5	.....
	(b) Manufacturing conditions which safeguard purity, quality and uniformity of product		5	.....
	Total Perfect Score		100	.....
	Total Score of Sample			
	Scored by			

ment. All manufacturers of hard candy are invited to join in the discussion at this time.

Replies received up to the time of closing this issue are presented herewith. Understand that the purpose of the score card is that it be used by the buyer of candy to guide him in appraising the respective merits of the different products submitted to him. There is nothing official or compulsory about its use.

Manufacturers who feel that it is to their advantage to furnish these cards to their customers will do so. Those who do not see any value in tying in with this educational campaign to distributors of candy, or who hesitate to submit their goods to exacting scrutiny before their own trade will have no use for the score cards.

The wholesalers and retail dealers acting as purchasing agents for their community are the only judges or "official scorers" of candy quality as they must perforce be in any event.

A revised draft of this Hard Candy Score Card embodying such of these comments and criticisms as appear to meet with general favor will be presented to the jobbers and better retailers, together with explanatory matter about each factor affecting the quality of the goods, through the medium of THE CONFECTIONERY BUYER, a new specialized publication for distributors of confectionery. In the meantime an advance proof will be sent to anyone interested.

All manufacturers of hard candy are invited to join in the discussion at this time.

Our Letter to Hard Candy Manufacturers

Re: Hard Candy Score Card

To the Manufacturers of Hard Candies.
Gentlemen:

The bread baking industry is only one of several to have adopted a uniform scoring system to their own and the consumer's satisfaction. The manufacture of plastic hard candy is sufficiently standardized to permit of a similar application to this field. The obvious advantages of such a grading system are as follows:

The establishment of a uniform language of quality for all buyers and sellers of plastic goods;

The recognition and evaluation of all of the factors which contribute to the salability of the product;

The creation of a quality consciousness among makers and vendors of hard candies by focusing attention upon the fine details of quality in this confection;

The providing of a comprehensible basis for the advertising and selling of meritorious products.

You can probably think of numerous other advantages which would accrue from the general adoption of such a system of grading.

In order to test the practicability of this movement we have prepared the enclosed form for a score card for use in grading all varieties of plastic work both bulk and package. On the reverse side will be printed "Candy Buyer's Reference Data"—an explanatory paragraph about standards of Appearance, Eating Qualities, Keeping and Selling Qualities mentioned on the face of the card.

While this score card is purely tentative and subject to your suggestions and revisions it nevertheless reflects the combined efforts, not only of the technical staff of this publication, but of numerous collaborators in the trade who have been most generous with their time and assistance.

We want you to tell us quite frankly what you think of it.

What Is Your Opinion on the "Score Card" Idea?

1. Do you like the idea of having a score card for each major classification of candy?
2. Do you agree or disagree in any important particular, with the method of evaluating plastic work which is presented herewith?
3. Do you think the credits are properly apportioned? If your answer is negative, please state your reasons for this position.
4. Have you any additional comments or suggestions to offer regarding the ground to be covered or the kind of information which will make this score card of greatest constructive service to the industry both to manufacturers and distributors.
5. If the opinion of the trade is favorable, how would you suggest going about the task of securing the universal adoption of such a system throughout the industry?

If this first hard candy score card and candy buyer's reference service proves to be practical we will continue to devise score cards for other kinds of candy.

We would like to have your reply before closing the Hard Candy Edition of THE MANUFACTURING CONFECTIONER—August Issue. This subject will also be discussed in an early issue of THE CONFECTIONERY BUYER which will reach nearly ten thousand jobbers and large retailers of candy after the form has been submitted to manufacturers.

ROBERT RANDOLPH,
Managing Editor.

Their Answers

IMPERIAL CANDY COMPANY
Seattle, U. S. A.

Answering question one, our answer is "Yes"; answer to question two—O. K.; answer to question three—"Yes"; answer to question four—do not see how this can be improved upon; answer to question five—if you met with a favorable response it seems to me it would be necessary for you to have established possibly within the National Confectioners' Association, an unbiased, expert board who would pass on the different samples submitted for their consideration, and score them for the privilege of using in their advertising and sales material the fact that their line had met with such and such a score by this board; answer to question six is "Yes."

I think you have started a really constructive work, and hope you will be able to carry it through to a successful conclusion.

C. E. ROBERTS, President.

GEORGE CLOSE CO.
Cambridge, Mass.

1. Yes, we like the idea of a quality score card for each kind of candy.

2. The credits seem fair enough.

The standard on keeping qualities would depend on whether from viewpoint of consumer, retailer or jobber, we would think.

(Signed) F. D. CLOSE.

A LEADING EASTERN MANUFACTURER

I am not in favor of an attempt at classifying a "quality" of any kind of confectionery. "Quality" is a very elusive thing when you try to take hold of it, and getting quality, whether in bread or confectionery, is something more than combining materials, be they good, bad or indifferent. Everyone will agree that the very best of materials can be put together and result in mediocre confections. There is much in skill, treatment and the handling of goods after they are made. Then, too, there is a difference in tastes, personal idiosyncracies, etc.

I notice under the heading of 2 (c) Quality of center; (d) Flavor of center. How can you separate the two?

No, I think it is dangerous. I don't believe that we would care to be labeled and put in a pigeon hole, and I imagine that this feeling is common to all manufacturers who are striving to make the best possible product.

WALLACE & CO.

I have read, with interest, yours of July 25th regarding a Hard Candy Score Card, and am answering the questions embodied therein, as follows:

1. Yes.
2. Excellent method of scoring.
3. Yes.
4. No.
5. At annual meeting of the National Confectioners' Association, or through members of the Executive Committee of same.
6. Yes.

If I can be of further service to you I will be glad to have you call upon me.

Yours very truly,

A. M. KELLY.

HEIT-MILLER-LAU CO.

Fort Wayne, Ind.

At our organization meeting yesterday, we discussed the score sheet, about which you had written to me on July 25th, and our conclusion was, that it is too involved.

It depends somewhat upon how you are going to use it.

The object in all of these things is to make them of practical value. It occurs to me that if a buyer had before him a card on which is listed the various factors that go to make up a general piece of hard candy, that it would be of value to him in checking a piece which is presented to him for consideration. Such a list, however, I think should be simple, and I do not think that it would be necessary to consider the matter of percentage.

On the other hand, if it is to be used in the factory for the guidance of the foreman and his workmen, then I think such a list of factors as shown under No. 1, 2 and 3, would be of value.

The usual fault in preparing things of this kind is that they become so involved that they are impractical for general use, and I am just giving you these reactions of mine so that it may serve as a guide to you. No doubt you are having other suggestions coming in to you.

Very truly yours,

W. C. DICKMEYER.

NATIONAL CONFECTIONERS' ASSOCIATION

I think it is a good idea. It would be a comparatively easy matter to establish a practical standard for plastic candies. As you of course know, there are a great many grades and qualities of such candies. Some of the manufacturers who make these candies change the quality to fit the price at which they are sold. When sold at a low price, the shell is thicker and the centers are poor quality and poorly flavored, and the workmanship and finish is inferior. The sale of any kind of inferior-quality candy is a detriment to the industry.

Some manufacturers, as you know, make up special assortments of plastic candies and various shapes of solid hard candies which are sold at lower prices than the genuine plastic candies, but which the public probably purchases under the impression that they are all plastic candies. I have no doubt that many a purchaser of such candies is surprised to find that a great percentage of the assortment is solid and not plastic candies.

Relative to the score sheet which has been arranged in five subdivisions for points scored:

I think that the first three divisions are entirely practical and very satisfactorily arranged. As to the fourth and fifth divisions, there may be some question, especially with reference to the fifth. I mean by this that a small, unknown manufacturer who is starting in business might and probably would place on the market a superior quality of plastic candy which would not be backed up by any reputation of the manufacturer. The scoring for such a manufacturer would be practically nothing insofar as his reputation was concerned. However, the conditions in his plant as to cleanliness, etc., should receive the same scoring as that of a manufacturer who had been in business for a long time.

In other words, I think it will be much more difficult to satisfactorily score the points for sections four and five than it will be to score them for the other three. However, in a general way, I think that your score sheet is all right and I assume from what you state in your letter that it has been submitted to various manufacturers of plastic candies and no doubt has been arranged after receiving their suggestions and advice.

I think that you have hit upon a good idea and after a little experimenting it will no doubt be determined as to whether it is necessary to make any change in the arrangement of the score sheet.

WALTER C. HUGHES, Secretary.

THE ROCHESTER CANDY WORKS

Rochester, N. Y.

We appreciated it very much receiving your letter of the 25th, telling us about your plan to adopt a Hard Candy Score Card.

You might be interested to know that we have found it quite difficult in some cases to convince a prospective buyer of the high quality of our hard candies, because in a good many instances, the quality is based by him on appearance only, which is not the only factor in gauging the quality of hard candies.

Any method that is going to make it easier for the buyer to distinguish between different grades of hard candies is commendable and deserves the support of manufacturers making quality hard candies.

We will try to answer the six questions on the last page of your letter to the best of our ability.

1. You ask if we like the idea of having a Score Card for each major classification of candy. We are convinced that any method which will help the buyer to distinguish quality differences between different kinds of hard candies deserves the support of manufacturers that are trying to maintain a high standard of quality in their hard candies.
2. You ask if we agree or disagree in any important particular, with the method of evaluating plastic work which you have presented in your tentative score card. Yes, we do disagree on some points because we feel that when gauging the quality of hard candies it involves other quality points not specified in your score card, which will be taken up in detail in another part of this letter.
3. The question is asked as to whether we believe the credits are properly apportioned. If the score card must be amplified and widened in its scope to include a wider range of quality points, it would of course, change the basis of the credits.
4. You ask if we have any additional comments or suggestions. Perhaps it might be just as well to include our suggestions under this heading. Because of the lack of knowledge that the average buyer has about the quality points of hard candy; we believe that an instruction sheet should be provided him which would explain in detail each point, such as the gloss, character of die work, colors, etc., so that he would be in a position to render a fair and accurate decision on the scoring of each quality point. We would like to offer the following suggestions that may possibly be helpful to you in developing a manual or instruction sheet. For instance, under your heading of No. 1 entitled "Appetizing Appearance," subject-heading A. *Finish or Gloss;* in instances where a buyer is comparing two samples of plastic filled work submitted by two different manufacturers, in order to obtain a good basis of comparison, he should place the two samples on a table side by side and have plenty of good daylight because we have found in a good many cases the difference in gloss will not show up unless a good light is obtained.

B. *"Character of Die Work"*—We believe instructions should be given to the buyer as to what to look for, for instance, if two samples of filled confections were being compared which represented a peanut, it would be necessary to determine whether the impressions on the different pieces were deep enough to tell what the particular item was. On 100 per cent filled goods you will find that the impressions on the different pieces are perfect because they are made on the right kind of plastic

machines and are also made with skilled labor, which is highly essential in making high quality filled goods.

C. *"Color"*—There is considerable difference of opinion as to what constitutes quality in coloring of hard candies. Some manufacturers are of the opinion, judging from their products, that hard candies should contain plenty of color to give the candies a bold, striking appearance. However, we feel that there is a certain re-action on the part of the consumer against too strong colors, and for this reason we try to soften down the colors in our different hard candies, which when the different colors are added to an assortment, it gives a more quiet natural effect. We believe that when too much color is added, it creates an artificial appearance which has an unfavorable reaction on the part of the consumer.

D. *Striping*—As stated before, in order to make high quality hard candies, it is necessary to have highly skilled labor. Where striping is employed on the best grades of hard candies you will find that the stripes are evenly spaced and the stripes are uniform in thickness, which of course creates a beautiful effect on the finished product, but when the same piece is made by a careless workman who is not particular about the spacing of his stripes, it immediately places that particular kind of candy in a much inferior classification.

E. *Jacket*—There is considerable to be said under this heading. Of course the thickness of the jacket determines the proportion of the jacket to the amount of soft center used in the candy. Here is where a great deal of the shading in quality is done by those manufacturers who are selling their product on a price basis. We consider 30 per cent of center and 70 per cent of jacket as being the right proportion to produce a high quality filled hard candy. We have found by actual tests that if the center is increased beyond 30 per cent it makes the shell so thin that it is liable to crush in transit. On the other hand, if a manufacturer attempts to cut down the per cent of filler it makes a much harder piece, which is not only inferior from an eating standpoint, but of course, reduces the cost, which makes it possible for the manufacturer to sell his product at a lower price under the false assertion that his goods are 100 per cent filled.

F. *Mixture*—Under this heading we do not quite understand what you are trying to determine. If this heading is supposed to cover the general appearance of the mixture as to color, striping, gloss, and the impressions of each piece, then we would suggest that the only way the general appearance of one mixture as compared with another could be obtained, would be by placing each mixture side by side and noting the general effect as to whether it is pleasing or otherwise. Of course, this final test would be judged largely on what the standard would be as to the finish, the character of the die work and the color of the striping.

G. *Dust or Pieces*—There is a great deal to be said under this heading, but it is impossible to go into details. However, if a mixture of hard candy chips off and dusts very readily, it shows that there are imperfections in boiling and the proportion of the ingredients in the hard candy itself.

EATING QUALITIES

A. *The Bite or Crunch*—In our opinion, a good piece of filled confections should have a crispness when you bite into it, but it should not be so crisp that it becomes brittle and dusts very readily when packed in a mixture. Here, of course, the proportions of sugar and corn syrup enter this quality point, and of course, if hard candy has too much corn syrup in it, it makes it tough and also gives it a poor color, but of course, where a manufacturer is making a cheap product, he naturally uses as high a percentage of corn syrup as he can to cut the cost. A piece of hard candy with the right proportions of corn syrup and sugar will give the right degree of crispness.

B. *Flavor of Jacket*—Of course, there are all kinds of flavors, varying in quality that can be used in flavoring hard candies. For instance, if a manufacturer is making a high quality raspberry piece with a raspberry jelly center, he will use the natural fruit flavor in the jacket, and the natural raspberry fruit in the center, but if he is making a low quality piece on a price basis; the jacket will be flavored with an artificial flavor and the jelly will probably be flavored on the same basis.

D. *Flavor of Center*—There are different kinds of centers that are used of course in plastic filled goods, which consists of three general types; first, the jelly centers; second, the cream fondant centers, and third, the center made with a blend of nut meats and fondant. If the jelly centers are made with true fruit flavors, they will have a much finer quality. The cream fondant centers are generally one type of quality as they are made with the same basic materials. The nut meat centers, unless they are treated, will become rancid after a certain length of time, which has a tendency to give a very disagreeable odor to the whole mixture, which is quite noticeable when the cover is removed from a five-pound can of confections where the nut centers have become rancid. This is a very important point to note.

KEEPING QUALITIES

The best way to tell how well an assortment of hard candies have been made is to place it on a table with another grade, and then determine which becomes most sticky and loses its gloss more quickly. The test should be made of course under ordinary atmospheric conditions. If a hard candy is made with the right proportions of sugar and corn syrup and has been boiled at the right temperature and under the right conditions it will resist adverse atmospheric conditions more readily than when an assortment has been made with a high per cent of corn syrup and not sufficient attention is paid to boiling conditions. However, this test is a very easy one for the buyer to make and of course shows up very quickly the highest quality sample.

4. *Turnover Possibilities*—We hardly feel it is necessary to go into detail regarding this subject heading, as most any buyer can determine for himself the merits of different packages submitted to him.

5. *Source of Supply*—As for the reputation of the manufacturer, his ethics, etc., all of this information can be very easily obtained by the prospective buyer.

We have tried to be frank in giving you our opinion on the different subject headings in your prospective score card, and realizing as we do the good that most surely will be accomplished in educating the buyers as to what quality hard candy is, we shall be only too glad to cooperate with you, if there is any further information we can give you along this line.

Most cordially yours,
M. W. COLEBROOK.

NATIONAL CANDY CO., INC.
St. Louis, Mo.

I have your circular letter of the 25th, also your personal note on the subject of Hard Candy Score Card, and my answers to the six questions are as follows:

1. Yes.
2. No.
3. Yes.
4. No.
5. The only way I can see is to take the matter up with all manufacturers of Hard Goods and try and have them adopt your system.

It seems to me that you are picking out a big job for yourself, but I really believe it's practical to do so and that something along this line will prove mighty helpful to buyers and to manufacturers also.

Yours very truly,
(Signed) V. L. PRICE, President.

SMITH & PETERS
Philadelphia

Referring to your letter of July 25th we like the idea of having a score card for each major classification of the industry very much but as we manufacture a lozenge line exclusively we are not in a position to offer any suggestions regarding the Hard Candy Score Card.

When you are considering a score card for lozenges we would like to cooperate with you.

Yours very truly,
P. J. WUNDERLE, Manager.

AN OHIO MANUFACTURER

With the establishment of a uniform language so that the buyer and seller will be able to determine just what is meant by Nougatines—Maple Walnuts—Caramels—Marshmallows, etc., this would be a grand idea and if there were a standard formula this also would be of assistance.

(Continued in next issue)

Fodder for Sales Conferences

(*Continued from page* 49)

dustry would do more business and do it on a higher plane. The Adviewer believes this advertisement would be considerably better if the

illustration of the candy carton had been made in half tone even though the use of color (the ad is printed in orange and blue) might have complicated matters. The copy says, in case you can't read it: "In summer stick candy sales boom. Salesmen want items like this to brighten the dull months. You can get distribution on Woodward's Pure Sugar Sticks this summer that will make you profits for years to come. It is a 12-month seller and a great repeater. A good distribution on this old favorite will return you a surprisingly large volume. Try it. Write today for samples and discounts."

Moderne!

FREQUENTLY *The Adviewer* talks about Display. This Auerbach advertisement pictures just about what he means. Boldness, contrast, clearness without crowding, punch without being musclebound. 7-11 is safe, salable summer candy—that is the thought the advertiser wanted to put across. The illustration does it pretty well. Well worth noting, too, is the manner in which Auerbach has used the Bodoni type face selected. In the first place, it is chosen to harmonize with the illustration and not left to chance. Secondly, the copy is kept brief in order that some white space might remain to brighten up the ad and keep it from being nearly all black. Too many candy advertisers use about twice as much copy as they should. Instead of being satisfied with planting one, two or three ideas in the buyer's mind, they want

to give him the whole story right then and there. Auerbach suggests here how to turn out a strong, but inviting piece of copy in something less than 50 words.

Western Confectioners' Association Holds Meeting

The regular midsummer meeting of the officers and directors of the Western Confectioners' Association was held in San Francisco, August 6-7, at the Palace Hotel. The following directors, officers and visitors were in attendance: E. A. Hoffman, H. L. Brown, B. G. Showley, R. I. Stone, J. H. Kugler, E. M. Cosner, Alfred Beaudry, Harry Ostler, R. K. Kinningham, Arthur Sweet, E. G. Gimbal, Nate Matzger and A. J. Bale.

Matters under discussion during the two day session related principally to purely local and organization problems. These included plans for Candy Week, possible changes in the cooperatively manufactured Pat bar, plans for curbing direct selling to retailers at jobbing prices as practiced by certain western manufacturers, consideration of ways and means for more effective western tieup and functioning of the National Advertising campaign in the west and plans for the annual convention of the association.

Several resolutions were passed. Among them, one relating to the general use of the word Corn Syrup instead of the customary trade term Glucose, when referring to commercial corn syrup as used in manufacturing confections and many food products. This motion was introduced by E. M. Cosner of Denver, who has carried on extensive correspondence with food product and candy manufacturers throughout the middle west and east on this matter and the probable benefits to be derived from the suggested change.

It was brought out in discussion that the public has a faulty impression of the word glucose, and as a principal candy ingredient is inclined to look upon it as a strange, if not downright unwholesome or dangerous substitute. This idea, of course, works to the detriment of candy and its sale. Corn syrup describes the actual nature of the product in true terms and its use would eventually eliminate the false notions engendered by the customary trade name. The resolution, as drafted substantially embodies these ideas, and Secretary J. H. Kugler was instructed to send formal notice announcing the policy of the Western Confectioners' Association in regard to this technicality to all users and manufacturers of corn syrup, trade publications, etc.

The meeting also unanimously voted that a warning be issued to all association members in regard to the labeling of packages, whose contents in any way include cherries containing benzoate of soda. Such packages and labels would therefore bear the words "Cherries contain Benzoate of Soda."

It was decided to hold the annual convention of the Western Association at Hotel Del Monte, Del Monte, California, January 28-31, 1929. E. A. Hoffman, R. I. Stone, H. Blunt and Arthur Sweet were named as a committee for the convention and its programs.

M·C INSTITUTE

An impartial reader service devoted to the analysis and discussion of the new or novel methods of manufacture, supplies and equipment.

COLOR BY THE INCH!

—a new, novel and highly satisfactory solution of the problem of how to measure color for the hard candy batch

"Send up 25 yards of crimson, 15 yards of yellow and 20 yards of guinea green"—

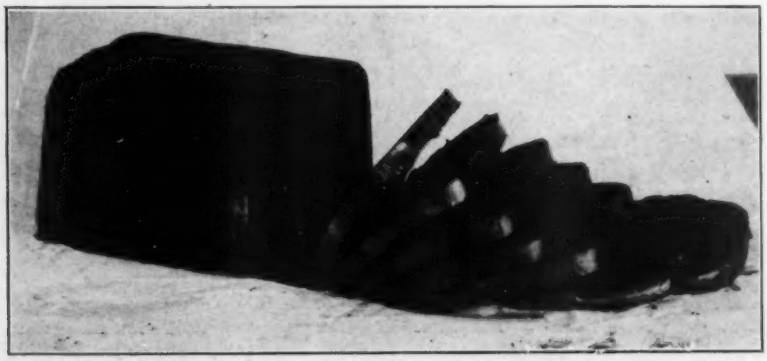
ONE might suppose it was a jerkwater candy store ordering its month's supply of ribbons, rather than a hard candy manufacturer placing a wholesale order for certified colors. Yet it is evident that we are approaching something not remotely akin to this situation when prominent hard candy manufacturers joyously abandon the traditional messes of paste color and give their candymakers an assortment of the new "loaf" colors with implicit instructions to use 1 inch of color to every 70 lb. batch.

We have not reached the point where the product is actually denominated in "yards," of course, but the working out of rectangular loaves of semi-solid color paste with a definite relationship between length and tinctorial power is one of the smartest advances in hard candy practice which has come the way of this department in some time.

Moulded into convenient 4-oz. blocks, these color loaves may be either measured or cut by eye into slices of uniform thickness. Thus it is possible for the first time to standardize on the amount of color to be used in the hard candy batch and to check the quantity of color used daily against the number of batches produced. The paste is of a cheesy consistency and holds its form under the normal temperature conditions of the hard candy room. It dissolves quickly and completely in the batch, leaving no specks, spots of discolorations of any kind.

Some idea of the popularity that is in store for this new product may be gained from the reception accorded to it by staid, old-fashioned candymakers of the plants in which it has been tried. They not only evinced enthusiasm and satisfaction over the results which they obtained with it, but in practically every instance expressed the hope that they would be able to secure a steady supply of these loaves in the future.

The new color loaves are the product of the New York distributor for a Chicago color house.



1-inch of the new color loaf has been found to have precisely the right tinctorial power for a standard 70-lb. batch of hard candy.

Coast-Pitted Prunes

A LARGE, independent Coast packer has distributed to a number of his friends in the trade samples of Santa Clara prunes pitted by a new machine to which he has recently acquired the patent rights.

The samples were of a medium size prune, probably about a 50/60 count and showed no evidence of tearing or of the pin pricks in the skin which characterize the work of the pitting machines heretofore available. These pin pricks have a nasty habit of causing the skin to tear when the prunes are soaked up for glazing and stuffing.

A novelty redwood package which is now being put out by a small California retailer, and of which something like 2,000 are said to have been sold during the first few weeks the package was on the market, showed the wide range of adaptability of this new product. The prunes were of small size, stuffed with various centers, covered with a thin layer of fondant and coated with vanilla chocolate. The assortment of centers consisted of mint-flavored Turkish paste, walnut half in coffee cream, stem ginger, orange marmalade, and maraschino cherry in bitter almond fondant.

The flavors were all strong and distinctive, the prunes serving as a vehicle for the centers and establishing the texture rather than the flavor of the candies.

Worm-proofing the Pecan

FUMIGATING the pecan against insect infestation has taken on a difficult aspect in view of the recent discovery that this nut, unlike other nuts which have been satisfactorily treated with carbon disulphide, tenaciously retains the odor and flavor of this fumigant after repeated air washings and vacuum treatments. So far as is known at the present time, it is the only gas which will effectively exterminate both larvae and eggs and not impart an objectionable flavor to pecans in hydrocyanic acid. This gas, while lacking the explosive propensities of unmixed carbon disulphide, is extremely toxic and requires the employment of more elaborate safeguards to protect operators and other persons likely to come into contact with it.

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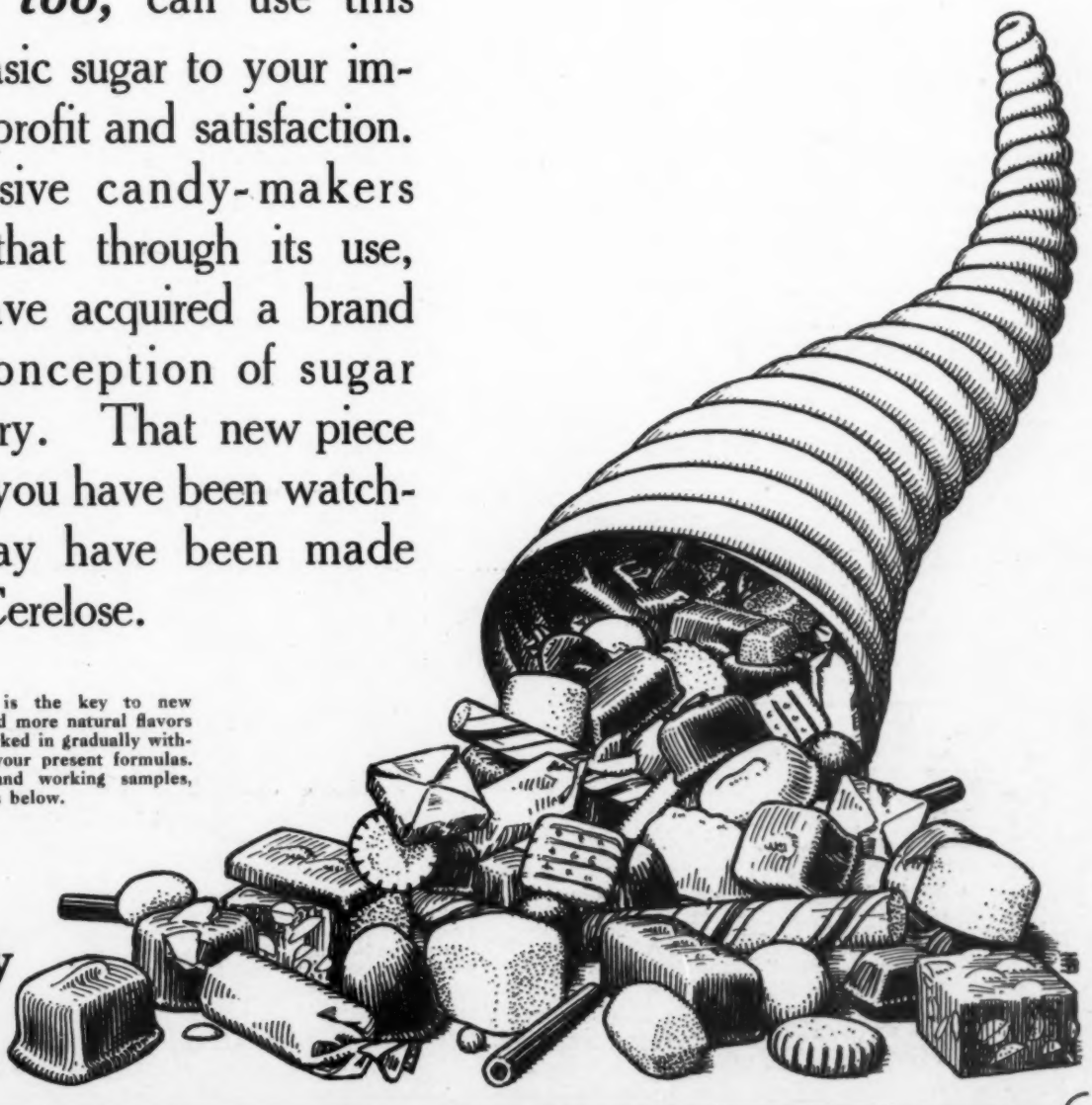
You, too, can use this new basic sugar to your immense profit and satisfaction. Progressive candy-makers admit that through its use, they have acquired a brand new conception of sugar chemistry. That new piece which you have been watching, may have been made with Cerelose.



CERELOSE is the key to new textures and more natural flavors—it may be worked in gradually without disrupting your present formulas. For formulas and working samples, write to address below.

...mpany

Dr. Herman N. Bundesen Retained by N. C. A. to Direct "Candy for Health" Campaign

AT the annual meeting of the National Confectioners' Association held recently at Chicago, Dr. Herman N. Bundesen, president of the American Public Health Association, took the lid off and told the members some startling truths about their business from the public health angle.

This address of his was received with thunders of applause. The doctor, as every one knows, is a downright character, and a ball of fire when he gets started. Above all, he wanted to know why the association didn't come out emphatically with a campaign not only combatting the old prejudice against candy, but showing how positively beneficial candy is, in the diet of children especially.

The advertising committee had, as a matter of fact, been considering just such a positive program for a long time, and had worked it out in comprehensive form. The committee, of course, knew nothing in advance of what Dr. Bundesen had on his mind, any more than the doctor knew what the committee had on the fire.

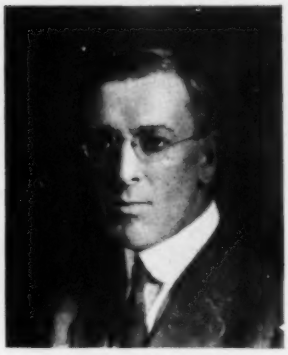
So there was a dramatic moment when George H. Williamson, chairman of the advertising committee, presented its plan to the meeting, showing how the idea would be handled in national advertising and with dealer tie-ups.

The campaign is startling and a departure from anything the association has ever undertaken. It is educational in character, and undertakes to build good will for candy in the national advertising and sales at the dealer's store. Hitherto, the national advertising has undertaken to be a national selling agent, so to speak, to sell candy off the printed page. That, however, is really not its job. What the national advertising should do is obviously to furnish a background which the store can use in its local merchandising.

That background is health, the wholesome, necessary character of candy. All this copy is, of course, based on strictly scientific data, and no statements are made that are open to question. To guarantee the strictly ethical character of this campaign, the association has retained Dr. Bundesen, noted for his work in public health and his enthusiasm in the promotion particularly of child welfare. Dr. Bundesen will act as counsellor to the association in all matters touching public health, and will check all association publicity and advertising copy for scientific accuracy.

As intimated, the advertising committee has long had under consideration such a strong, positive campaign. It is a radical step, however, to attack a prejudice, no matter how unsound that prejudice may be. The committee has been looking for a way to meet the widespread prejudice against candy without putting the candy industry on the defensive.

Modern dietetic science is the answer. Fortunately, there has in recent years been a flood of light poured on the whole subject of the function of carbo-hydrates in the diet, and as a consequence, today the candy manufacturer has no apologies to make about his industry. From the point of view of public health, he can be proud of his job.



W. E. Lowell Moves to Newark

Bentz Engineering Co. announces that W. E. Lowell has been advanced to the position of assistant to the president. Mr. Lowell's many friends in the Midwest, while congratulating him on his promotion to the higher executive position, regret his leaving Chicago. He assumes active management at the factory and will direct his energies from now on in a broad scope of endeavor. Mr. Lowell has, for a number of years, been Western manager. He may now be reached at the home office of the Bentz Engineering Co., 661 Frelinghuysen Avenue, Newark, N. J. We all wish him continued success.

Ekco Furnace Now Manufactured by Savage Bros. Co.

Savage Bros. Co. of Chicago, manufacturers of confectioners' machinery and equipment, announce that they have acquired the manufacturing and sales rights of the full line of furnaces formerly manufactured by the Edward Katzinger Company of Chicago.

The relinquishment of this line by the Edward Katzinger Company, it is announced, was in accordance with that company's policy of specializing in pan equipment exclusively.

How to Plan a "Candy Week and Sweetest Day" Campaign in Your City--Send for Free Plan Booklet

A BOOKLET giving an outline of plans and suggestions for the observance of Candy Week beginning Sunday, October 7th and ending on "Sweetest Day" Saturday, October 13th, 1928, is now available.

Prepared for the use of Candy Manufacturers, Jobbers, Retailers, Clubs, Associations, and Sales Promotion Committees, or any one interested in making arrangements for this important fall opening date and Merchandising Event for Candy.

National Confectioners Association, 111 West Washington Street, Chicago